University of Alberta

Female Health Professionals as Online Learners: Our Experiences and Our Stories

by

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Abstract

In this study, the experiences of seven female health professionals learning online were examined and, in this context, the implications for online course designs and future research were discussed. The instruments of data collection included individual telephone interviews, journals written by the participants during online courses and e-mails exchanged by the participants and researcher. The principles of narrative inquiry were integrated into the process of collecting and analyzing the data. The participants identified lack of face-to-face interaction and overload of work as major challenges of learning online. Increase in confidence and the opportunity to belong to a community of learners were cited as rewards of learning online. In addition, the participants identified preferences for contextual and experiential learning, and for learning environments which foster collaboration. They agreed that interacting with other classmates, building local support and developing a mentoring relationship with instructors were key aspects of a successful learning experience.

Dedicated to my parents, Ronaldo and Lucia, to my husband, Marcelo, and to my daughter, Alice.

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After some years of practice as a nutritionist, I decided to go back to school and get a Master's degree. My main objectives in pursuing further education were to learn more about different aspects of health and achieve career growth. When I was gathering information about the Master's programs available in Calgary, I became very interested in learning more about online learning. Pursuing a Master's degree online seemed a good option for me. I could enroll in the program of my choice without having to move to the city where the university offering the program was located. Moreover, I could still keep my part-time job and fulfill my family responsibilities. After spending some months looking carefully through several online Master's programs, I decided to become an online learner.

As soon as I received the letter of acceptance from the university offering the program, I started experiencing the challenges of being an online learner. Although I had some computer skills, shopping for and setting up my own computer were not easy tasks. By this time, I wondered if I would be able to deal with all the technology involved in the online program that I chose. However, the fact that the faculty offering the online program was planning to provide an orientation session for the new students helped me to cope with my initial worries.

In the orientation session, I had the opportunity to meet the students who were part of my class and also some of the instructors who taught the core courses of the program. During the orientation, I noticed that other students, all of them women, shared the same worries regarding the use of the technology involved in online learning and the geographic distance between instructors and students. The initial orientation session helped us to get started by presenting the course programs and the course websites. The course websites used WebCT and a "tree structure" format to facilitate group discussion.

On the bulletin board, questions based on the readings were posted every week, and students were supposed to discuss them. As students began posting their responses online, the discussion became confusing to follow. Moreover, I found that WebCT did not facilitate creativity. It was difficult for students to create diagrams or insert pictures to enhance the quality of their answers. A lot of spontaneity and visual cues were lost in the discussions, and in many situations, important themes were lost in the overwhelming amount of written information.

To keep myself in the loop of the discussions was difficult, especially in classes with a large number of students. Handling the large amount of reading and writing was another problem that I had not anticipated. I would spend hours each day reading and writing, and what was supposed to be a part-time course ended up being a full-time course. Initially, I thought that getting a degree

online would give me flexibility, but later, due to the large amount of reading and writing added to my work and family responsibilities, I worried if I would really be able to accommodate studying, working and personal responsibilities.

Sometimes, I felt insecure about the quality of my performance as a student, and I needed constant reinforcement. The geographical distance between instructors and students was also a challenge, and feelings of isolation were part of my life as a distance student. One reason I could cope with these feelings and move forward in the program was that I belonged to a very supportive group of women with whom I shared my worries and celebrated my achievements.

As time went by, I became more confident about the technology used in the online courses and about the quality of my work as a student. However, other challenges related to being a distance student, such as accessing academic and library services, started to bother me. I felt in a disadvantaged position in relation to the students who were taking the program on campus. The academic services were initially intended for on-campus students and they were not always adapted to the needs of distance students.

In September 2001, I met Dr. Katy Campbell, who was also interested in researching how women approach online learning, and shortly after that we started working together. My decision to research the design characteristics that

facilitate learning in the online environment from a female perspective was based on my own experience as a distance student and on previous research conducted in the field of online learning. As a female health professional learning online, I experienced the challenges previously described as anxiety about technology, feelings of isolation and insecurity due the geographical distance from the academic institution and between students, overload of work caused by the heavy use of written forms of communication, and loss of spontaneity due to the lack of face-to-face communication. When I conducted a literature review on online learning, I noticed that these challenges were also part of the experience of other learners and were widely discussed in the literature. I also noticed that in the existing literature about online learning, the links between the challenges of learning online, gender issues and learning preferences were made in only few works. Moreover, these links were usually uncovered during course and program evaluations focused on processes and outcomes and not on learners' stories and experiences.

After reflecting about my own experience as an online learner, I realized that the experiences of female health professionals learning online constitute an important source of data which can provide valuable information for the design and instruction of online courses. For this reason, I formulated the following research questions:

1. How do female health professionals experience online learning?
2. What can we learn from the experiences of female health professionals learning online in order to design online courses that are more appropriate to the needs and learning preferences of this specific group?

In this section, I described my personal experience as a female online learner. Most of the themes uncovered in my story relate to the characteristics, advantages and challenges of online learning. Moreover, they raise questions about learning preferences, gender issues and pedagogical issues. These themes generated my research questions and they form the foundation of the following literature review.

Online learning is a reality in Canada. In 2001, 57 percent of Canada's 134 colleges and universities offered online courses. Combined, these institutions offered almost 3000 online courses, ranging from one to 340 such courses for each institution (Advisory Committee for Online Learning, 2001). Health professionals constitute a growing group taking advantage of the flexibility offered by online learning (Chapman 2000; Dixon, Horden, & Borland, 2001). Most professional associations which regulate health professions in Canada require that their members undertake training periodically to update their skills according to the changing demands in the field of health. This training, especially in the field of nursing, is often offered online since it is expected that the prospective students will continue to work in their field while learning (Carnwell, 2000; Zimmerman, Barason, & Pozehl, 1999). Due to the fact that females constitute the majority of health professionals in Canada, there is a strong possibility that the number of women seeking online post-secondary courses will increase significantly in the near future (Statistics Canada, 1998). In this context, research that focuses on online learning from a female perspective has become relevant to the design and delivery of online courses.

This study is intended to advance the literature on online learning and adult education for female health professionals by applying narrative research as

a method of valuing the participants' experiences and reflections as a source of knowledge. By telling our own stories, we make sense of the world around us (Bruner, 1996; Kessen, 1993). Stories constitute knowledge and by telling them, we recall this knowledge, recreate it and reinterpret it according to our current situation (Mildorf, 2002). In this study, by listening to the participants' stories and also by telling my own stories about online learning, I facilitated reflection on and gained understanding of the reality of female health professionals learning online. In order to achieve this objective, I formulated the following research questions:

1. How do female health professionals experience online learning?
2. What can we learn from the experiences of female health professionals learning online in order to design online courses that are more appropriate to the needs and learning preferences of this specific group?

Furthermore, I conducted a literature review based on the following aspects of my research topic:

1. Characteristics of the online learning environment.
2. Advantages of online learning.
3. Challenges of online learning.
4. Learning preferences and online learning.

5. Gender issues and online learning.

6. Pedagogical approaches for online learning.

I organized this literature review into six sections, as described above. In the first section, entitled characteristics of the online learning environment, I examine the roles of students, instructors and academic institutions. In the second section, I discuss logistical and schedule flexibility as the main advantages of online learning. In the third section, I examine the main challenges faced by students enrolled in online courses; these include anxiety about technology, overload of work, loss of visual communication and feelings of isolation. In the fourth section, I discuss the concept of learning preferences, the main learning preferences of health professionals learning online and strategies for accommodating a variety of learners. In the fifth section, I examine anxiety about technology commonly presented in the experiences of women learning online, the characteristics of women as learners and teachers and the characteristics of supportive learning environments for women. In the sixth and final section, I discuss constructivism and situated learning as pedagogical approaches to make online environments more appropriate to the needs and preferences of female health professionals pursuing further education.

By exploring the characteristics of online learning and gender issues involved in online learning, I developed an understanding of the reasons for the

growing popularity of online learning among female health professionals and the challenges faced by this group in learning online. By examining the theory on learning preferences and the pedagogies applied in online teaching, I identified strategies to cope with the challenges of learning online, which will help to create more appropriate learning environments for women and to transform the experience of learning online into a rewarding one for this group.

Characteristics of the Online Learning Environment

The Advisory Committee for Online Learning (2001) defined online learning as an educational approach in which learning and training are facilitated and supported by networks such as the Internet and intranets. This definition of online learning only takes into consideration the technology used in the design and delivery of online learning and does not include essential aspects such as the interactions that occur among students, instructors and academic institutions in the online environment. The objective of this section is to understand the online environment based on the different roles played by students, instructors and academic institutions.

The role of the student.

Online learning at its very best is considered a self-directed approach in which the student plays an active role in the learning process (Chapman, 2000). According to the literature, being a self-directed learner means taking most of the

responsibility for the learning process (Dixon et al., 2001; Zimmerman et al., 1999). In other words, instead of passively receiving information, students need to be able to process information and express their ideas independently without having the instructors in person giving lectures and directing their learning (Chapman, 2000) Moreover, being self-directed means being able to make decisions regarding how to achieve learning goals and how to manage time in order to complete the readings and assignments proposed (Davidson-Shivers, Muilbenburg, & Tanner, 2001).

Considering that most of the communication in online courses occurs via e-mail, bulletin boards and chats, students need to be able to express their thoughts in writing and deal with the challenges such as lack of visual cues and spontaneity (Valente & Luzi, 2000; Vician, 2000). Students are expected to develop critical thinking skills and integrate examples of their practice with the theory learned in order to engage in deep discussion about the topics proposed by the instructor (Dolmans, Volfhagen, Van Der Vleuten, & Vijnen, 2001; Wadell, Tronsgard, Smith, & Smith, 1999). Moreover, they need to apply their abilities to work individually and in groups because they are required to answer the questions posted by instructors and also present feedback in response to other students' answers in the bulletin board (Mills, 2000).

In terms of technology, learners are expected to develop computer skills in order to interact effectively in the online environment. Students who are not able to develop these computer skills tend to feel held back and frustrated (Kanuka, 2001; Swan, 2001). These feelings will have a negative impact on their learning, increasing the chances of their quitting the online program (Mills, 2000). According to Cummings, Bonk, and Jacob (2002), in order for distance students to perform successfully in an online environment, they should have the following important computer skills and abilities:

1. The ability to operate e-mail programs: In online environments, most individual communication between students and instructors tends to occur via e-mail (Valente & Luzi, 2000). Instructors can send individual feedback to students by e-mail. Instructors can also allay doubts and communicate information about upcoming academic events and the course schedule by e-mail. For these reasons, it is essential that distance students have access to an e-mail address and understand the importance of checking and replying to their e-mail messages often (Vician, 2000).
2. The ability to search for information in online databases and to use search engines: Students are required to search for information on the World Wide Web and to locate the needed materials in order to

prepare the assignments proposed by the instructor. Knowledge of how to navigate in the databases found in the library websites can help students to access the most up-to-date and relevant literature about the topic under study.

3. The ability to navigate in the course website: In many online course websites, students are able to find notes for each unit of the course content, useful information regarding assignments and important dates, online tutorials and quizzes and even links to relevant websites (Soon, Sook, Jung, & Im, 2000). The ability to navigate effectively in the course website and use all the resources offered is crucial for academic success (Cummings et al., 2002).
4. The ability to access the necessary technology involved in online chats and video conferences: Some online courses offer students the chance to interact synchronously with their instructor and classmates by using online chats and videoconferencing. In such courses, students need to have access to the technology required, and they also need to connect at a predetermined day and time for the discussion to occur (Vande Vusse & Hanson, 2000). Such synchronous discussion strategies can represent a challenge to students who work shift schedules or live in different time zones (Cravener, 1999). Moreover, the use of this

technology can represent a challenge for students with hearing or speech problems (Kim-Rupnow, Dowrick, & Burke, 2001), for students with unreliable access to technology and for those who cannot afford the latest technology (Ahola-Sidaway & McKimmon, 1999).

As a distance student, I had to learn how to study independently and how to use the necessary technology effectively to perform the tasks proposed. Although I consider myself an independent learner, during the initial phases of the program, I needed support and reinforcement from the instructor in order to feel comfortable with the technology and the demands of learning online. For example, in the beginning of my program, I experienced problems accessing the online library and downloading full-text journals, both of which were essential in order to complete my assignments because I had almost no time to go to the library. After trying unsuccessfully to access the library and feeling frustrated, I decided to contact the course instructor via e-mail to discuss the technological problems that I was experiencing. The instructor was very helpful and provided me with a detailed description of the steps to access full-text documents online, addressing my doubts and even suggesting some relevant online journals and databases for the upcoming assignments.

This individual support provided by the instructor helped me to overcome my insecurity regarding the use of technology and also helped me

with my assignments throughout the program since I could access the most up-to-date literature from home. If I had not received this support, I would have felt frustrated for not taking advantage of the technology available for distance students, which can help them to save time if they know how to use it effectively. I believe instructors play a crucial role in facilitating the learning process and also in making students feel comfortable about using the technology required in online courses. Although I think that it is not realistic to expect that instructors will be technical experts, I also believe that it is part of the role of instructors to understand the anxiety about technology felt by some students and to be knowledgeable about the academic resources available to address these technological issues. The role of the instructor as a facilitator and the challenges of teaching online are discussed next.

The role of the instructor.

According to Davidson-Shivers et al. (2001), online learning is a self-directed approach in which students assume responsibility for their learning and the instructor plays a facilitator role. The facilitator role includes helping students to keep focused, encouraging group work, providing constructive feedback, assisting with the technology or referring students to the academic resources responsible for dealing with technological issues. Moreover, instructors need to state clearly the learning goals of the program and provide students with

a variety of assessment tools to measure the achievement of these goals (Dixon et al., 2001; Soon et al. 2000). A facilitator role differs from an instructor because the former emphasizes the learner's needs and the process of constructing knowledge while the latter is goal-oriented and emphasizes content delivery and assessment (Jonassen, 1995a; Jones, 2001).

In a study conducted by Cravener (1999), online learners' self-efficacy increased when instructors provided them with both individual and group reinforcement and were constantly involved in the discussion. According to Vande Vusse and Hanson (2000), assistance with course navigation is considered a real necessity especially during the first term of distance programs, which, for many students, is the first time that they are involved with distance learning technology.

In contrast to researchers cited in the previous section, Dixon et al. (2001) and Soon et al. (2000) discuss online learning as a self-directed approach in which both instructor and students need to interact and cooperate to have a successful learning experience. Teaching online requires from instructors different facilitation skills than does face-to-face instruction (Vician, 2000). Instructors need to feel comfortable with the technology used in the delivery of these courses, but even more importantly, they need to feel comfortable with the process of communicating with students by using communication media such as

e-mails and bulletin boards, which do not involve face-to-face interaction (Valente & Luzi, 2000).

From my experience as an online student, I observed that teaching a course online could be as challenging as learning online. Connecting with students, offering constant feedback, facilitating group interaction, helping students with their technological issues and considering new pedagogical approaches can pose real challenges for instructors. An important aspect to take into consideration when teaching and learning online is the level of the support offered by the academic environment to both online students and instructors, as discussed next.

The role of the academic institutions.

Instructors teaching online play an essential role in facilitating the learning process by interacting with students, offering constant reinforcement and allaying technological doubts. However, it is also important that the academic institution offer a high level of support for both students and instructors (Mills, 2000). Zimmerman et al. (1999) found that services such as a toll-free 24-hour help-line, an online library and online access to academic information are essential for distance students. Furthermore, students need to receive adequate training in order to learn how to take advantage of the benefits offered by these services. In terms of academic support services for instructors,

training in both technology and pedagogy applied in online courses should be periodically provided. Additionally, the academic institution should provide instructors with contact numbers to be used in case problems regarding technology and course materials occur (Vande Vusse & Hanson, 2000).

Especially in the beginning of my academic program, I felt that online students did not have the same level of access to academic services as on-campus students. In fact, improvements in academic services for distance students are continually being implemented in the field of online learning. It is essential for academic institutions offering on-campus and distance programs to create infrastructure to accommodate the needs of both on-campus and distance students.

In this section, the roles of students, instructors and academic institutions were examined. The authors reviewed talked separately about the roles of students, instructors and academic institutions. However, based on my experience as an online learner, I believe that successful online learning experiences involve collaboration between students, instructors, and academic institutions--not simply self-directed learning on the part of students. Most of the authors reviewed consider online learning a self-directed approach in which the students take most of the responsibility for their learning. However, the demands of online learning can pose a considerable challenge for female health

professionals, who usually have other responsibilities, such as raising a family and working shift hours. For these reasons, online course designs which place most of the responsibility for learning on the students can be especially stressful for female students (Kramarae, 2001).

Considering the aspects of online learning described above, it is possible to anticipate the advantages and disadvantages of learning online. The most important advantage of online learning, according to the literature reviewed in this study, is the logistical and schedule flexibility it offers. This advantage, discussed next, is considered the major reason why online learning is becoming so popular among health professionals.

Advantages of Online Learning

Logistical and schedule flexibility are considered the main reasons for the growing popularity of online learning among health professionals (Chapman, 2000; Dixon et al., 2001; Soon et al., 2000). Female health professionals need to accommodate education and training in their busy schedules, which usually involve shift work and family responsibilities besides being a student. In this section, logistical and schedule flexibility are identified as advantages of online learning, and their implications are examined in detail.

In studies conducted by Chapman (2000) and Dixon et al. (2001), nurses identified online education as a valuable opportunity to update knowledge and achieve career growth. The participants also perceived online learning as a flexible approach because students could enroll in the program of their choice without having to move to the city where the program was being offered. Logistical flexibility can be extremely beneficial to students living in rural areas who wish to pursue further education. Furthermore, the logistical flexibility offered by online learning can facilitate partnerships between institutions all over the globe, providing students with more program options (Zimmerman et al., 1999).

Although online learning can represent a great opportunity for health professionals living in rural areas to pursue further education, it is also important to add that many female health professionals living in big cities where the major universities and colleges are located may still prefer to enroll in online courses. A possible explanation for this fact is that such learners may value not having to quit their jobs or be away from home to attend classes on campus (Kramarae, 2001).

Logistical flexibility was considered an important factor in my decision to become an online student. I was interested in a program that was being offered

in a different city from where I was living, and moving to this city was not an option for me. The logistical flexibility offered by online learning can significantly increase the options for health professionals interested in pursuing post-secondary education. Besides logistical flexibility, schedule flexibility, which is discussed next, also represents an advantage for health professionals.

Schedule flexibility.

According to Soon et al. (2000), a large number of health professionals are turning to online learning because of its schedule flexibility. Cravener (1999) pointed out that in online learning most of the schedule flexibility occurs because students are able to access instructors and course materials outside regular office hours. However, it is important to mention that some technological features used in online learning, such as online chats, teleconferences and video conferences, can decrease both schedule and logistical flexibility and bring challenges to female students with family and work responsibilities. Decisions about incorporating such features in online courses should be discussed among students and instructors (Swan, 2001; Wadell et al., 1999).

In the studies presented in this section, online learning was considered a flexible approach for health professionals pursuing post-secondary education. Female health professionals can benefit from the schedule flexibility offered by online learning because they can stay with their family and continue working

while pursuing further education. However, online learning can also bring stress and frustration for online learners already overloaded by family and work responsibilities.

As a female health professional interested in pursuing post-secondary education, I also considered schedule flexibility as an advantage. However, later on in my program, the advantages of both logistical and schedule flexibility were overshadowed by challenges such as anxiety about technology, overload of work, loss of non-verbal cues and feelings of isolation, as described next.

Challenges of Online Learning

Learning online offers the advantages of logistical and schedule flexibility but also poses challenges as a result of the geographical distance between students and academic institutions (Cravener, 1999). In this section, the challenges of learning online, such as anxiety about technology, overload of work, loss of non-verbal cues and feelings of isolation are described, and strategies to help instructors and students to overcome these challenges are proposed.

Anxiety about technology.

Anxiety about technology was one of the most common complaints among distance students in the studies conducted by Dixon et al. (2001) and Soon et al. (2000). Assistance with course navigation was pointed out as a real

necessity, especially during the first term of online programs, which for many students was the first time that they were involved with distance learning technology (Vande Vusse & Hanson, 2000). Cravener (1999) commented that if programs do not include orientation about how to operate the technological features commonly used in online courses, class time will be spent on answering students' technological questions. In many cases, if not correctly addressed, anxiety about technology can impair the quality of students' performance. In this context, some strategies to support distance students include the following:

1. The creation of a toll-free help-line available 24 hours per day to solve students' problems related to technology (Mills, 2000).
2. The use of a self-screening assessment tool to identify students who need to improve their computer skills (Zimmerman et al., 1999).
3. The creation of learning packages to help students with a low level of technological knowledge to achieve the recommended level of computer literacy required to attend online courses (Wadell et al., 1999).
4. The creation of an introductory course to train students in the skills necessary to learn online: navigating through the course content, interacting in the online environment and researching in online libraries (Vande Vusse & Hanson, 2000).

The strategies to deal with anxiety about technology involve students, instructors and academic institutions. As I mentioned previously, it is not reasonable to expect that students will be self-directed enough to cope with all the problems they may encounter, including technological problems. Only collaboration among students, instructors and academic institutions will address this issue properly.

As a distance student, I experienced anxiety about technology in the initial phases of my program even though I had access to a computer and some technological skills. Being a student in an online environment required not only my ability to use technology, but also my ability to adapt this technology to my communication needs. All these new abilities that distance students need to develop in order to perform well in online environments can create stress and lead to an overload of work if not correctly addressed, as discussed next.

Overload of work for students and instructors.

In Craverner's (1999) study, instructors teaching online mentioned an increase in workload in comparison to face-to-face instruction, especially during the online course planning stage. Online courses demand more precise planning for the elaboration of instructional material. Initially, the course content needs to be adapted for the online environment. Then, course material needs to be available for students prior to the beginning of the course to give students the

chance to get familiarized with the course content ahead of time. Problems with the delivery of course materials can occur and cause delays in the beginning of the course if planning is not done in advance.

Soon et al. (2000) found that students considered online courses time consuming mostly because they needed to read and write everything they want to communicate, instead of just expressing their ideas verbally as in face-to-face learning environments. Additionally, the way learning goals are stated and evaluated has also been found to have an impact on workload for students. Gillis, Jackson, Braid, MacDonald, and MacQuarrie (2000) found that when learning goals and assessment strategies were clearly stated at the beginning of the course, students felt that the course workload was more manageable.

Problems in accessing course material due to insufficient technological infrastructure and lack of training to operate online features have also been cited by students as causes for work overload in online programs (Ahola-Sidaway & McKimmon, 1999). According to students, lack of information about related websites and difficulties in connecting to the internet due to speed problems were barriers to the learning process (Cravener, 1999).

Most of the literature reviewed in this section relates overload of work in online courses to the large amount of reading and writing and to problems with technology. One aspect that was neglected is that in the case of female health

professionals learning online, all these demanding aspects are being added on top of work and family responsibilities (Kramarae, 2001). My experience as a distance student helped me to understand that online learning can be time consuming for both students and instructors, especially when an online bulletin board was used. In online courses in which bulletin boards were used, some strategies proposed to cope with the overload of reading and writing include limiting the number of weekly postings and dividing students into groups with one group leading the discussion each week (Soon et al., 2000).

The use of communication media that combine audio and video can also reduce the time spent in reading and writing messages (Vande Vusse & Hanson, 2000). However, it can reduce flexibility and exclude students with hearing and speech disabilities and students who cannot afford the latest technology (Ahola-Sidaway & McKimmon, 1999; Kim-Rupnow et al., 2001). Audio and video media speed up the communication process and provide students and instructors with the chance to benefit from visual communication, commonly absent in online environments (Valente & Luzi, 2000). The lack of visual communication and loss of non-verbal cues are considered major challenges of learning online. These issues are discussed next in this literature review.

Lack of visual and non-verbal cues.

Valente and Luzi (2000) observed that asynchronous written forms of communication such as e-mail and bulletin board messages can reduce judgments based on physical appearance and social status, allowing more authenticity in the discussion. E-mails and bulletin boards are commonly used in online learning due to their affordability and flexibility. However, the lack of visual and non-verbal cues can pose some issues in the use of these communication media. Written communication tends to be more structured, impersonal and less spontaneous than face-to-face communication (Davidson-Shivers et al., 2001). Previous research in the field of online communication suggested that the lack of non-verbal cues and ambiguity in communication could impair the social interaction in online environments (Trevino, Lengel, & Draft, 1987). Salaberry (2000) challenged this view, suggesting that online communication does not impair the interaction, but creates a new communication environment with different ways to construct information.

It is possible to enhance online communication by providing students and instructors with options to choose among different types of media, the best one to suit their needs (Gillis et al., 2000). The combination of synchronous and asynchronous communication methods in online learning is often the best option to compensate for the limitations of the different types of communication media

in online learning (Zimmerman et al., 1999). Wadell et al. (1999) suggested that by combining different communication media, it is possible to improve the level of interaction in online environments and reduce feelings of isolation commonly felt by distance students.

During my online program, I did not have the chance to experience forms of communication other than e-mail and bulletin boards. This was probably one of the reasons why I felt that spontaneity was missing in the dialogues and that the social interaction among students tended to be too formal. I think it is important to underline that the use of different communication media can also provide students with different opportunities to interact with instructors and get the level that support that they need. However, it is also important to consider whether students will be able to access this technology and how much of their flexibility will be compromised.

Lack of face-to-face interaction and the predominant use of written forms of communication such as e-mails and bulletin board entries in online courses can present challenges for students who consider visual information essential for their learning. Moreover, in combination with geographical distance, these factors can create feelings of isolation, as discussed next.

Due to the geographical distance between students and the academic environment and the lack of face-to-face interaction, students tend to experience feelings of isolation especially during the initial phases of online programs. If not addressed, these feelings of isolation can impair the ability of students to learn and to perform effectively in the online environment (Cravener, 1999). In situations when feelings of isolation were not addressed by instructors, students showed decreases in their motivation to learn (Chapman, 2000). According to Verbeeten (2001), students need to perceive learning as a social experience and feel that they belong to a "community of learners" in order to learn effectively in online environments.

The combination of synchronous and asynchronous communication media in online learning is often the best way to reduce feelings of isolation commonly felt by distance students and to provide students and faculty members with more options to facilitate the learning process (Zimmerman et al., 1999). Mills (2000) described a successful experience of using different types of communication media to facilitate online discussion and reduce feelings of isolation in the online nursing Master's program at Saint Louis University. In this online program, a bulletin board based on a "tree structure" was created to provide students with the opportunity to communicate asynchronously as a

group. Additionally, e-mails and videoconferences were chosen as the main tools for interaction between students and faculty members to address questions regarding assignments and aspects of the course content. Other strategies suggested to reduce feelings of isolation and increase students' motivation include the following:

1. Inviting guest speakers for an online chat session or video conference with the students (Wadell et al., 1999).
2. Scheduling at least one chat session per content module and having the instructor facilitating the conversation (Soon et al., 2000).
3. Using the discussion board more often by assigning activities to be done in groups (Mills, 2000).

In my case, what helped me to cope with the feelings of isolation was the role played by instructor in facilitating discussions on the course bulletin board and providing constant feedback. The way instructors facilitated discussions on the bulletin board by asking questions related to our practice as health professionals, inviting silent students to participate, and sharing examples from their practice, helped me to feel part of a community. Moreover, I felt less isolated when instructors immediately replied to my e-mails, especially the e-mails about questions regarding the assignments. I think that having different communication media helps, but it is also important to have instructors who

understand their role and the communication characteristics of the online environment.

In this section, the major challenges of online learning were reviewed. Anxiety about technology, overload of work, communication issues, and feelings of isolation were all part of my experience as a distance student. Although these challenges appear in the majority of studies about online learning, the way students perceive and deal with them is a result of the interaction among their learning preferences, gender, and the pedagogies to which they are exposed (Holton, Swason, & Naquin, 2001; Merriam, 2001). As a result, the study of learning preferences is essential to understand how different learners approach online learning and to customize online course designs according to the target audience. A detailed discussion about learning preferences is the topic of the next section of this literature review.

Understanding Learning Preferences

The concept of learning preferences has its roots in cognitive psychology. The literature on cognitive psychology indicates that individuals present significantly different ways of organizing, processing and remembering information and that these differences in approaches are related to their personality and aptitudes. Researchers in this field have developed the following

categories to describe different aspects of individuals' cognitive personality and their learning styles:

1. Field dependents and Field Independents (Witkin, 1979): These terms relate to individuals' autonomy in learning. Field dependents seem to need more support during the learning process while field independents can learn with less support. In terms of learning preferences, field dependents tend to prefer more collaborative learning and group assignments than field independents.
2. Analytical and Holistic (Riding & Cheema, 1991): These terms relate to individuals' ability to view a situation as a collection of parts or as a whole. In terms of learning preferences, holistic learners may prefer opportunities to brainstorm ideas and find multiple solutions for the problem proposed.
3. Verbalizers and Visualizers (Richardson, 1977): These terms relate to individuals' ability to learn from verbal and auditory information or from visual and spatial information. Visualizers tend to prefer reading materials with a well balanced combination of images and text while verbalizers may prefer reading and talking about the new concepts in combination with the use of media which can convey auditory information.

4. Scanning and Focusing (Carnwell, 2000): These terms relate to individuals' tendency to scan through written information and concentrate on key aspects or read through all the text, focusing on details and taking only few short cuts. Scanning learners may cope more easily than focusing learners with the large amount of readings required in most online learning environments.
5. Accommodators and Assimilators (Kolb, 1984): These terms relate to individuals' ability to learn through active and concrete experience or through abstract conceptualization and reflective observation. Accommodators tend to prefer learning environments that foster theory and practice connections and experiential learning while assimilators tend to prefer learning through observation, reading about abstract concepts and integrating them in theoretical models.

The classification of learners into learning styles is beyond the scope of this study, which focuses on learning preferences. However, the literature on learning styles does provide a background to understand why learners have different learning preferences and how they can be trained to develop new learning skills. Since the concept of learning preferences was derived from the theory on learning styles, I provided an overview of the theory on learning styles

in order to facilitate the understanding of learning preferences, which are discussed next.

Learning preferences relate to the different ways learners prefer having course content presented and taught (Carnwell, 2000). These preferences are usually developed based on the pedagogies and social contexts to which the learners were exposed. Furthermore gender, age and culture may also play a role in the development of these learning preferences (Holton, Swason, & Naquin, 2001; Merriam, 2001). For example, in the context of gender, the works of Carnwell (2000) and Yuliang and Ginther (1999) showed that most female students tend to be field dependent and prefer learning in collaborative environments with lots of support from classmates and instructors. They also tend to be holistic learners, viewing a situation as a whole and analyzing problem from multiple perspectives. Teikmanis and Armstrong (2001) found that culture can also influence the learning preferences of students learning online. When teaching nursing students online, these authors noticed that students for whom English was not the first language relied more often on visual aids to enhance their learning, found it harder to learn about abstract concepts than concrete concepts, and preferred collaborative and experiential learning. These authors noted that students who have previously been exposed to learning environments in which instructors played an authoritarian role may find it

difficult to function in a more democratic learning environment in which learning goals are negotiable between students and instructors.

Learning preferences are not static; they are dynamic and adaptable according to the learning environments to which the learners are exposed. In other words, when exposed to a new learning environment, learners will develop and adapt their learning skills to cope with the demands of the current learning environment (Carnwell, 2000; Gillis, Jackson, Braid; MacDonald, & MacQuarrie, 2000). The dynamism and flexibility of learning preferences are what differentiate this concept from the concept of learning styles discussed previously. Learning styles are innate cognitive characteristics of the individuals and they tend to be static and suffer less influence from the learning environment to which individuals are exposed.

In this section, the concept of learning preferences was examined within the online environment. Furthermore, strategies to accommodate a variety of learners were proposed. The study of learning preferences is extremely useful in order to understand how different audiences approach learning and find the appropriate fit between the pedagogy applied, the presentation of course content and the provision of support for students (Cravener, 1999; Smith, 2001). Appropriate learning environments should support a variety of learning needs

and preferences, and they should also provide learners with opportunities to develop new learning skills, as discussed next (Carnwell, 2000; Gillis et al., 2000).

Adapting to demands of the online environment.

Learning online can present challenges for students who are not used to its characteristics, which include handling large amounts of reading and writing, and dealing with the lack of face-to-face interaction due to the geographical and temporal distance between students and academic institutions (Vande Vusse & Hanson, 2000). As a learner, I preferred having an instructor explaining verbally a new concept to me first, writing notes during the lecture and then reading about the new concept in the textbook. In sum, when learning about a new concept, my preferences were first, listening; second, writing; and third, reading. These learning preferences were supported and reinforced in most face-to-face courses I took in the past. When I became an online learner, I had no previous experience with the online environment, and I had no idea that I needed to adapt my learning preferences in order to perform successfully in online courses. The most difficult aspects for me were not having an instructor verbally explaining the new concepts, not having class notes to refer to, dealing with the large amount of readings and formulating my own answers for the discussion on the bulletin board. Initially, I spent a lot of time reading through all the messages posted and trying to summarize the most relevant ideas. Also, I had difficulties

in formulating my own postings since I had to integrate the readings, consider other students' messages and also bring my own experience to the discussion. However, by being exposed to constructivist pedagogies and by receiving support from instructors and classmates, I was able to develop certain learning skills which helped me to deal with the huge amount of reading.

For instance, I was able to perform selective reading based on the learning objectives stated for each unit of course content, focusing on the parts of the text or messages that were relevant. By the middle of my program, I was able to use my time on the bulletin board efficiently and I started to enjoy it as a tool to facilitate my learning. Moreover, I was able to learn new information without having an instructor explaining it verbally to me due to the development of critical thinking, which involves the ability to construct new knowledge based on prior knowledge and the experiences lived by the learner. In most face-to-face courses I had taken in the past, I had the notes from the lectures, and my answers to the discussions in class were mostly based on these notes with less in-depth reflection of how my experiences as a learner and a professional related to the new concepts learned. My story illustrates that online learning environments require the adaptation of learning preferences and the development of learning skills, a process which can occur through the exposure to appropriate pedagogy and the provision of the right amount of support.

The ability to handle large amount of readings through selective reading, to integrate theory to practice through the development of critical thinking and through collaborative learning are also among the most important learning skills that students need to develop in order to perform successfully in online courses according to Carnwell (2000), Driver (2002) and Vande Vusse and Hanson (2000). The understanding that learning preferences, different from learning styles, are dynamic and adaptable if the learners are exposed to the appropriate pedagogy is essential to inform tutor roles, help students to develop new learning skills, and design online courses materials that are supportive of the variety of learning preferences (Carnwell, 2000; Gillis et al. 2000; Smith 2001), as discussed next.

Accommodating a variety of learning preferences.

Accommodating different learning preferences in online environments can be challenging for instructors (Vande Vusse & Hanson, 2000). It is recommended that course materials and teaching strategies support a variety of learning preferences. Instructors could be advised to provide learners with a well-balanced combination of different aids and media to facilitate their learning process and to develop new learning skills (Carnwell, 2000; Smith, 2001).

As previously discussed, learning preferences are dynamic and adaptable according to the demand of the learning environments if appropriate pedagogies

are applied. Carnwell (2000) suggested three aspects to consider when accommodating different learning preferences: (a) course materials, (b) teaching strategies, and (c) learning assessment methods. In the terms of course material, a mix of text, diagrams and images is advised because in the same classroom, students would prefer learning through both visual aids and written information. For the students with a preference for visual information, having a well balanced mix of both text and images would help them to handle the large amount of reading, concentrate on the most important aspects of the readings and enhance their learning (Vande Vusse & Hanson, 2000). Course material containing both theoretical concepts and examples related to the practice would encourage students who prefer concrete and experiential learning to make connections between theory and practice (Smith, 2001). In terms of teaching strategies, instructors could suggest activities to facilitate individual and collaborative learning, providing students with opportunities to learn from each other and to view situations from multiple perspectives (Gillis et al., 2000). In a (2001) study by Graham and Scarborough, higher levels of student satisfaction and motivation were achieved in online courses which provided students with opportunities for interaction. Additionally, in a study by Garrison, Anderson and Archer (2001), learners considered that online interaction was responsible for the development of critical thinking and in-depth discussions about the course

content. All these design characteristics and learning preferences relate to the 39
constructivist pedagogy, which will be discussed later in detail. Constructivist pedagogies offer students more opportunities to interact as a group, which seems to encourage critical thinking and contextual learning (Jonassen, 1991; 1995a). In constructivist environments, students are invited to work collaboratively in groups to tackle the assignments proposed and to make theory and practice connections through reflection and integration of prior experiences when learning about a new concept (Dolmans et al., 2001).

The use of visual and audio media in combination with written information is strongly recommended in the delivery of course content and as a strategy to improve provision of support for students. In a study by Davidson-Shivers, Muilenburg and Tanner (2001), learners mentioned that in certain situations they felt a real need to interact with instructors and receive support synchronously by, for example, talking on the telephone. A combination of visual and audio media would equally benefit students with audio and visual learning preferences (Salaberry, 2000; Wadell et al., 1999).

Besides having the course content presented in a variety of ways, interacting with classmates and receiving the appropriate amount of support were also considered important for students learning online, according to Driver (2002). Cravener (1999) and Mills (2000) found that students tend to present less

feelings of insecurity and higher levels of motivation if they receive constant feedback from the instructors and support with the technology used in the delivery of online courses. In a study by Chapman (2000), students commented about their need to have their questions promptly answered by the instructor in order to perform successfully in the assignments proposed.

It is also recommended that learning assessment methods present the same characteristics discussed above, providing students with equal opportunities to have their learning assessed on their abilities to work both individually and in groups (Driver, 2002), on their abilities to perform experiential and abstract learning (Roberts, 2002) and on their ability to communicate their thoughts verbally, in writing or visually. Assignments such as papers and presentations via video- or teleconferences would provide students with the opportunity to be evaluated on both their written and verbal abilities (Salaberry, 2000). It is also suggested that instructors present students with feedback regarding the mark assigned and invite students to perform self-evaluation (Roberts, 2002). This strategy would help students to identify their strengths as learners and also their needs in terms of developing new learning skills to best cope with the demands of learning online.

As previously stated, learners bring to online environments a variety of learning preferences which are the result of the interaction among aspects such

as previous learning experiences, gender, culture and age. However, it is also important to underline that these learning preferences are not always congruent with the demands of learning online. For this reason, students will often feel the need to adapt their learning preferences and develop new skills to enhance their learning and their performance as students. These adaptations are possible and can be facilitated in the online environment by constructivist pedagogies and the provision of the appropriate level of support. For this reason, it is advised that instructors spend some initial time getting to know their students and their learning preferences. For instance, instructors and students could introduce themselves and comment on their professional and educational backgrounds. These initial introductions would help instructors to identify students' expectations regarding support, presentation of course content and assessment methods (Nolan, Morrison, Riegel & Thomason, 1999). Additionally, students would develop a better understanding of the expectations of the instructors and the course's learning goals. As a result, they would be able to identify which learning skills they need to develop in order to have a successful learning experience (Carnwell, 2000).

Since gender can have an influence on the learners' preferences and it is the main focus of this study, the discussion about learning preferences started here and expanded in the next sections of this literature review will facilitate the

understanding of how female students prefer to learn, what challenges they face in the online environment and how they cope with these challenges.

Gender Issues and Online Learning

Considering that female health professionals represent a growing group enrolling in online learning (Kramarae, 2001; Statistics Canada, 1998), it is important to understand how gender can influence and shape their learning preferences. Moreover, in order to design online courses for this specific population, it is important to understand the social context in which this group is immersed. The fact that many women nowadays have careers does not necessarily mean that they do not have to deal with the demands of traditional female roles such as taking care of the house and raising children. In this context, pursuing further education means adding one more task to their already busy routine (Kramarae, 2001). This fact can bring feelings of guilt and frustration which can impact their learning experience (Belenky, Clinchy, Goldberger & Tarule, 1997; Stanley-Spaeth, 2000). Moreover, some women may have been away from the academic environment for a long period of time, which can also bring feelings of insecurity and low self-efficacy (Campbell, 2000).

Online learning represents a great opportunity for female health professionals interested in pursuing post-secondary education and achieving professional growth. However, it is important to take into consideration that

most of the women taking online courses already have busy routines which usually involve shift work and family responsibilities (Gillis et al., 2000; Kramarae, 2001). It is a misconception to consider online learning as flexible just because students can access course materials at any time and do not need to attend classes on campus. Flexibility needs to go beyond that, providing female students with opportunities to make decisions regarding their learning goals and how they allocate their time to achieve these goals (Holton et al., 2001; Merriam 2001).

In order to make online learning appealing to the women, it is essential to understand the social context in which women are immersed and design learning strategies that are supportive of their lifestyles and learning preferences (Campbell, 2000; Gillis et al., 2000; Kramarae, 2001). This understanding of the female students' social contexts will allow us to identify how female students relate to the technology used in the delivery of online courses and to better understand the characteristics of women as learners and teachers, as discussed next.

The relationship between women and technology.

The way women use technology as learners or teachers is embedded in historical, social and cultural values. Due to the fact that males were primarily responsible for the developments in the field of information technology,

technology tends to reflect androcentric learning preferences, such as preferences for learning about abstract concepts and preferences for objective and quantitative knowledge (Burge & Lenskyj, 1990; Stanley-Spaeth, 2000). These characteristics are not always congruent with female learning preferences. Females tend to prefer subjective and qualitative knowledge and non-linear forms of problem-solving (Belenky et al., 1997; Boshier & Onn, 2000). The androcentric characteristics of technology and the way it has been taught in schools have been responsible for the development of feelings of low self-efficacy and anxiety about technology in women (McConnell, 1997; Stanley-Spaeth, 2000).

Considering that computer technology plays an important role in online learning, the socially constructed anxiety about technology shared by women has prevented them from taking full advantage of what technology has to offer in terms of education and career growth. Although a lot of literature has been generated to assist course designers and instructors in the creation of friendly online learning approaches for women, Gillis et al. (2000) and Kirkup (1995) found that some online environments technology still focused on linear styles of problem-solving, abstract dialogue and individual tasks.

The relationship between women and technology is socially constructed, and it can be changed by reviewing the way technology is taught in schools and the way online courses are designed (Campbell, 2000). According to Burge and

Lenskyj (1990) and McConnell (1997), the socially constructed relationship between women and technology may have an influence on the way women learn and teach online because female teachers have also been exposed to the same androgenic values regarding the use of technology. In this context, in order to address the barriers that may prevent women from taking full advantage of the benefits offered by technology and to design appropriate online learning environments for female students, it is also relevant to understand the interrelationships between characteristics of women as teachers and learners.

Women as teachers.

Due to the fact that gender differences relate to the way students learn and the way the information is conveyed, it is essential to take into consideration the perspectives of both female students and female teachers. Clark (2000) suggested two dimensions to consider when studying online instruction: the delivery technology and the instructional technology. The delivery technology is the hardware and software used to convey instruction to the students, and the instructional technology is the pedagogy used to deliver the instruction. The distinction between these two components can facilitate the understanding of women as online teachers.

Campbell and Varnhagen (2002) suggest that female instructors tend to focus initially on instructional methods. In terms of instructional methods,

female instructors are more likely to be student-centered and to apply learning strategies that emphasize cooperative learning (Lacey, Saleh & Groman, 1998; Park, 1996). Moreover, they tend to plan their teaching strategies ahead of time and to use a variety of evaluation methods, including self- and peer-evaluation (Kulis, 1997).

The female teaching characteristics described above should be understood in a historical and social context. Historically, women have been more involved in teaching activities than in research activities (Kulis, 1997). By reviewing the way women teach and learn, it is possible to notice that the same characteristics found in female learners, such as preferences for subjective learning, group work, concrete knowledge and non-linear approaches to problem-solving, are also found in female teachers (Smith, 2001). The understanding of the way women teach can help to enhance the understanding of their learning preferences and needs as students because as discussed previously women tend to incorporate into their teaching style the characteristics that they believe can facilitate their learning. Since the focus of this study is the learning preferences of females learning online, a detailed discussion of the characteristics of women as learners and the appropriate learning environments for female students is provided next.

In order to make online learning more attractive to female health professionals pursuing further education, it is essential to understand how women prefer to learn and the implications of their learning preferences for the design of online courses. According to Gillis et al. (2000), women seem to process information in a concrete, associative and non-linear manner. In a study conducted by Smith (2001), female students showed interest in qualitative knowledge and learning within a context. Also, female students preferred supportive, well-organized learning environments where teachers play democratic roles and instructions for learning are clearly stated (Campbell, 2000). Most of the authors cited in this literature review examined the characteristics of female learners in face-to-face classrooms. However, for the purposes of this study, it is also important to understand women's preferences within the online environment.

McConnell (1997) studied the characteristics of online communication according to gender. The results of this study showed that female distance students preferred course designs that provide them with the opportunity to express and discuss their points of view. According to McConnell, female learners tend to participate actively in online discussions and their messages often include supportive statements and statements that indicate

acknowledgement of the points made by other students (Davidson-Shivers et al., 2001; Wojahn, 1994).

In both face-to-face and online environments, women tend to prefer online designs that foster collaborative, contextual and well-organized teaching approaches (Campbell, 2000; McConnell, 1997; Smith, 2001). As a female distance student, I prefer online environments with a small number of students and opportunities to create interactions. I find it useful when opportunities to discuss theory in relation to practice are created and when the instructors are also involved in the bulletin board discussions. The learning preferences of female students may also be part of the teaching strategies developed by female instructors, as discussed next.

Creating learning environments for women.

Considering the growing number of female health professionals engaging in online learning for professional training, it is essential to develop online learning environments that incorporate their learning preferences and allow for maximum flexibility in order to be supportive of their lifestyle which also involves family and work responsibilities (Gillis et al., 2000). In other words, instructors should show flexibility when negotiating assignment due dates and ongoing class work. Also, learning activities should be grounded in their work and life experiences suiting women's experiences and values.

Critical theorists have suggested that most learning theories were developed by white males belonging to privileged social classes, which resulted in the creation of learning environments that are not supportive of the learning preferences of women and other minority groups (Kirkup, 1995). For this reason, the creation of learning environments based on the female learning preferences may also be inclusive of the learning preferences of other minority groups (Belenky et al., 1997).

Additionally, technology tends to reflect the values of a dominant, privileged class, which can prevent women and other minority groups from having access to the benefits of online learning (Ahola-Sidaway & McKimmon, 1999; Boshier & Onn, 2000; Bryson & de Castell, 1993). Therefore, instructors teaching online courses with a majority of women need to be aware of the fact that female students may suffer from anxiety about technology and feelings of isolation. For this reason, it is crucial that instructors offer support and constant feedback regarding the course content and the technology required in the delivery of online courses.

To integrate all the aspects discussed above in an online environment can be challenging for instructors and course designers. According to the literature, a constructivist pedagogy seems to best accommodate the learning preferences of female students because it emphasizes collaboration, learning within a context

and elaboration of multiple solutions based on critical thinking (Gillis et al., 2000). Moreover, the process of solving problems according to the constructivist approach involves the incorporation of previous experiences into the new knowledge, which relates to the way women learn (Campbell, 2000; Jonassen, 1995a).

In this section, the socially and historically constructed relationship between women and technology was analyzed. In addition, how this relationship shaped the characteristics of women as learners and teachers was discussed and strategies to create environments that are supportive of the female learning preferences were proposed. In the next section, the situated learning approach based on constructivist philosophy is examined as a pedagogical choice for online courses, and two pedagogical misconceptions regarding online learning are analyzed.

Pedagogical Approaches for Online Learning

Online learning represents a new way to understand and approach education. As result, instructors and course designers need to acknowledge the unique characteristics of online learning such as the geographical distance between student and instructors, the predominant use of written forms of communication and the use of technology to support the learning process. Furthermore, in order to apply an appropriate pedagogical approach to facilitate

the learning experience, instructors and course designers need to be aware that students present different learning preferences. In this section, the definitions of andragogy and pedagogy are presented, the most common pedagogical misconceptions regarding online learning are examined and the situated learning approach based on constructivist philosophy is discussed as the pedagogical choice for online environments.

Defining andragogy and pedagogy.

The term andragogy, which is defined as the art and science of helping adults to learn, was coined to make the distinction between adult education and children's education (Knowles, 1980). However, there is some controversy over whether andragogy should be understood as a theory of adult education or as a conceptual framework to inform the field of adult education (Pratt, 1993). According to Merriam (2001), the term pedagogy is considered the integrating science of education, and the term andragogy has been mostly used as one of the disciplines of pedagogy.

Andragogy has its roots in humanistic philosophy. It considers learners as self-directed and focused on personal growth (Saba, 2000). This framework describes the adult learner as independent, experienced, motivated to learn by internal factors, and interested in immediate application of knowledge (Holton et al., 2001). In practice, andragogy considers three dimensions that can influence

the adult learning experience. In effective learning environments for adults, all these three dimensions should be considered in order to both tailor and expand the learning goals (Holton et al., 2001):

1. Goals and purposes for learning, which can be individual, institutional, or societal growth.
2. Individual differences, which include cognitive styles and learning preferences.
3. Core adult learning aspects, which include the learners' need to know why, what and how to learn, the autonomous and self-directing characteristics of the learner, the professional experiences, the readiness to learn, the contextual orientation to learning, and the individual motivation to learn.

Although andragogy has brought the benefit of situating adult students in the centre of the learning experience, it has also received some criticism. The criticism is related to the fact that andragogy has failed to consider the influence of social, historical and cultural aspects in the learning process (Merriam, 2001). Self-directed learning should not be considered a characteristic of all adult learners as suggested in the andragogy framework. Instead, it is more realistic to believe that adults will have different degrees of self-directness according to the social, historical and cultural contexts to which they were exposed throughout

their lives (Lea, 1998; Saba, 2000). For example, most female students learning online will need support regarding the use of the technology during the initial stages of their online programs in order to cope with their anxiety about technology, which is a result of their exposure to the androcentric strategies used to teach technology in schools (Campbell, 2000; Gillis et al., 2000).

Considering that most of the authors reviewed in this section define andragogy as a discipline of pedagogy and as a framework for planning learning strategies for adults, the term pedagogy will be used in this study to indicate the general science of education. In the following section, two common pedagogical misconceptions found in online learning will be presented. Furthermore, constructivist pedagogies such as situated learning will be discussed as tools to facilitate collaboration, experiential learning and critical thinking.

Pedagogical misconceptions.

There are several misconceptions regarding online learning, two of which will be discussed in this section. The first misconception is that instructors, course designers and students can approach online learning using the same assumptions as those guiding traditional education methods. The second misconception is the belief that just by applying different types of technological tools, the quality of the instruction will be improved.

According to Jonassen (1991, 1995a, 1995b), traditional methods of education incorporate the symbolic reasoning paradigm, which assumes that knowledge is objective and learning is product-oriented. According to this approach, the goal of the learner is to reproduce the reality as interpreted by the instructor. The "symbolic reasoning paradigm" has been challenged by constructivist theorists. The constructivist theory claims that learning occurs in a real-world context when students work to solve real-life problems (Jonassen, 1991). Social theorists state that learning is socially constructed and it takes place in a community of learners as the result of conversation, collaboration and negotiation (Jonassen, 1995b).

The second misconception is related to the use of technologies as media for delivering instruction. Although different technological aids can enhance online communication, it is a common misconception to think that efficiency in accomplishing a certain pedagogical task will improve if a variety of delivery methods is used. In other words, the use of different types of communication media may not guarantee efficiency in the tasks performed by the students (Salaberry, 2000).

According to Levy (1997) and Salaberry (2000), in order to increase efficiency when performing pedagogical tasks, it is essential, first, to understand the particular features that distinguish different telecommunication media.

Second, it is necessary to identify possible barriers to the use of different telecommunication media in specific learning environments. Third, it is necessary to analyze what benefits telecommunication media can bring to the pedagogical task (Vician, 2000).

Soon et al. (2000) describe the experience of nursing students learning online at Yonsei University in Korea; the findings of their study support the three aspects cited in the works Levy (1997), Salaberry (2000) and Vician (2000) as crucial to the successful introduction of new technologies for learning in online environments. The pedagogical objective of the online program offered in this academic institution was to provide continuing education for registered nurses based on critical thinking about child growth and development. In order to accomplish this objective, a computerized instructional package was developed. This package contained texts and learning activities which the students were supposed to complete as they advanced in the program. Although the students could interact with each other and with the instructor by e-mail, the computerized course package did not offer opportunities for interaction and contextual learning. For this reason, the pedagogical objective of developing critical thinking on issues regarding child growth and development was not realized, according to the instructors. Additionally, the students showed a high

level of frustration regarding accessing and understanding the technology used in the delivery of the course.

This example also illustrates that the introduction of new technologies for learning in online environment should take a constructivist approach (Jonassen, Carr & Yueh, 1998). Online teaching strategies should not focus on deductive and product-oriented learning strategies. Instead, they should foster the development of critical thinking and collaboration (Clark & Estes, 1999).

Additionally, it is essential to choose a teaching approach that is congruent with the variety of learning preferences present in a classroom. Most of the adult learning models developed in the past were considered linear and non-interactive (Smith, 2001). Nowadays, approaches that facilitate interaction and collaborative learning are considered more efficient in the development of learning strategies for adult learners (Driver, 2002; Swan, 2001). In this context, the constructivist approach, which is discussed next, seems to be a preferred approach among adult learners because it fosters collaborative work, encourages experiential learning and situates learning in a real world context (Campbell, 2000).

Constructivism and situated learning in online learning environments.

According to Jonassen (1991, 1995a, 1995b), constructivism incorporates the notion of active learning based on context, construction of knowledge, and

collaboration and conversation among learners. Context is the physical, organizational, social, cultural and political setting where the experiences occur. Construction of knowledge stands for the creation of knowledge as a result of interactions between a context and individual experiences. Collaboration among learners allows the construction of new knowledge by encouraging learners to evaluate and test different hypotheses within learning contexts. Conversation is the tool that facilitates collaboration among learners (Brown, Collins & Duguid, 1989; Seaton, 1993).

Constructivism provides the philosophical foundation of situated learning. According to situated learning pedagogy, effective learning will occur when students work cooperatively to find solutions for problems that relate to their previous experiences. Dolmans et al. (2001) found that students exposed to situated learning environments tend to analyze problems in depth because they will activate prior knowledge, learn new information, and elaborate solutions based on the integration of both prior knowledge and new information. In online environments, this approach can facilitate team work because students need to work cooperatively, negotiate and find the best solutions for the problem proposed. Moreover, it can increase students' motivation to learn because the problems proposed are derived from real situations and, therefore, are perceived as relevant to practice (Gillis et al., 2000).

Edwards, Hugo, Cragg, and Peterson (1999) studied the use of situated learning in the context of online learning and found that synchronous communication media such as audio-teleconferencing could be successfully used in courses that applied situated learning as pedagogy. In a study by Wadell et al. (1999), the use of situated learning in combination with video-conferencing technology was found to promote in-depth discussions and cultural awareness about women's health issues.

These successful experiences illustrate that situated learning can be applied as a pedagogy in online environments in which the main goal is the achievement of critical thinking. Moreover, these examples also relate to the suggestions made by Levy (1997), Salaberry (2000) and Vician (2000) to establish the pedagogical goals first, ponder the pros and cons of different types of technology and then choose the best type to support the learning goal of the task proposed.

In this section, two common misconceptions about online learning were discussed, and the principles of constructivism and the use of situated learning as a pedagogical choice in online teaching were examined. In the next section, an overview of the most important themes discussed in this literature review is presented, setting the background for the methods and procedures applied in this study.

This final section presents a summary of the most important themes and limitations found in the studies analyzed in this literature review. Furthermore, it emphasizes the need for research that takes into consideration the perspectives of female students as a valuable source of information for the design of online courses.

In most of studies reviewed, logistical and schedule flexibility were considered the main reasons for the growing popularity of online learning among female health professionals (Chapman, 2000; Dixon et al., 2001; Soon et al., 2000). This specific group has the need to accommodate education and training in their busy schedules, which usually involve responsibilities in addition to being a student, such as raising a family and shift work.

Although flexibility is considered one of the major advantages of online learning, it is also important to acknowledge the challenges that this type of instruction can bring to students, such as anxiety about technology, overload of work, lack of visual cues and lack of spontaneity in the communication and feelings of isolation. The way students perceive and deal with these challenges is a result of the interaction between their learning preferences, gender, and the pedagogies to which they are exposed (Cravener, 1999). The study of learning preferences is essential to understand how different learners approach online

learning, to customize online course designs according to the target audience and to provide opportunities for new skill development (Carnwell, 2000; Smith 2001).

In the context of learning preferences, gender plays an important role in online environments. Female students seem to process information in a concrete, associative and non-linear manner and prefer qualitative knowledge (Smith, 2001). Moreover, they seem to prefer supportive, well-organized learning environments in which the learning goals are clearly stated. Such environments should foster interaction and value the experiences of female students as a legitimate source of knowledge (Campbell, 2000; Gillis et al., 2000).

Constructivist pedagogies such as situated learning are proposed when designing online courses for female health professionals. Situated learning fosters group interaction and critical thinking due to the integration of previous experiences with new concepts learned (Dolmans et al., 2001; Jonassen, 1995a, 1995b).

In Canada, health professionals constitute a growing group enrolling in online learning, and the instructional research base is not substantial in this area since the majority of studies tend to focus on evaluation, neglecting the experiences of female learners as central to the understanding of the issues involved in online learning. Therefore, this study is intended to advance the

literature on online learning and adult education by applying a qualitative approach which will value the participants' experiences and reflections.

Why Narrative Inquiry?

My first contact with narratives happened during my childhood when I played with my friends a game called "the hidden story." In order to play this game, we had to sit in a circle and one child started the story by writing down the theme on the top of a large sheet of paper and passing it to her next buddy. The next child was supposed to write down three sentences about the theme and then pass the paper again; folding the part of paper where she had written in order not to let the next child sees it. This same procedure was repeated until every child in the circle had the opportunity to participate. After that, we unfolded the paper, read the pieces written by each of us and tried to connect them to make one great story. By working together to connect all the sentences written during the game to make one great story representing all of our ideas, we learned about the importance of collaboration during the process of telling a story and making sense of it.

Later on, in my teen years, my friends and I told each other stories over the telephone for hours. These stories were about the challenges of growing up and taking responsibilities such as future careers, romantic relationships and family issues. In many situations, I would sympathize with my friends by telling my own stories about a similar situation. Telling these stories was my way to

provide and receive support. Moreover, it was our way to reflect on the situations we were facing and to grow as individuals.

As an adult, stories were still part of my life as both a health professional and a mother. During my work as a nutritionist in a hospital, one of the instruments to assess the nutritional status of the patients was the "Dietary Story." In order to collect the dietary story, we had to ask the patients and their family members several questions about food daily intake, food allergies and socioeconomic and cultural aspects of their lives. If patients were willing to provide us with further information, they would take home a form called the "Food Intake Diary" which they would use to record all their food consumption during three consecutive days.

When I was analyzing these data, rather than focus solely on patients' food intake, I found myself constantly reading through other information such as monthly income, household situation, cultural background, age and gender in order to make sense of the dietary and health issues faced by my patients because I found that these aspects had a profound influence on their food choices. By making the connections between their social context and their food intake, I was able to provide appropriate nutritional counseling to the patients and their families because I was able to understand the challenges that they faced when trying to incorporate the dietary plans prescribed into their lives.

Finally, as a mother of a two-year-old daughter, stories at bedtime are part of my daily routine. However, as soon as my daughter started to say her first words, she took the story book from my hands one night and started to tell me the stories from her own perspective based on the book illustrations. My first impulse as a mother was to say to her, "Let mommy read for you, dear," but she was not the least interested in having me reading the same stories over and over again. In her way, she was telling me that those stories could be told in many different ways and that her perspective should be respected because it was as valid and as true as my perspective.

After reflecting on my experiences with narratives and stories, I noticed that narratives and stories have also been part of my life. In fact, they are part of every person's life; people cannot be separated from their stories because they exist within them (Gudmundsdottir, 1998). From the moment that we wake up in the morning to the moment that we go to sleep at night, we are telling stories and listening to other people's stories. For these reasons, I believe that telling stories is our way to connect with people, to provide and receive support, to analyze situations, to reframe our thoughts and to situate ourselves in the context in which we live (Bruner, 1996; Kessen, 1993).

The reflection on my experiences with narratives has also led me to believe that the stories that we tell constitute a rich and valid source of data to

inform practice (Mildorf, 2002; West 1992). For these reasons, I decided to
apply the principles of the narrative inquiry in this study in order to answer the following research questions:

1. How do female health professionals experience online learning?
2. What can we learn from the experiences of female health professionals learning online in order to design online courses that are more appropriate to the needs and learning preferences of this specific group?

As a narrative researcher, I acknowledge that my personal experiences with narratives not only influenced my choice of using the narrative inquiry as a method in this study, but also shaped the way I interacted with the study participants, collected and analyzed the study data.

Applying the Principles of Narrative Inquiry

When I reflected back about my personal experiences with narratives, I identified that collaboration was the most essential aspect of the process of telling stories and making meaning from them. I believe that if trust is established during the initial contacts between researchers and participants, it is more likely that the participants will feel committed to the study, choosing to be involved not only during the process of collecting data, but also during the process of analyzing it. In the experiences with narratives during my childhood

and adolescence, the trust that led to collaboration was already established by the friendship we shared. However, in this study, I found that I should not take for granted that collaboration would be established without efforts to build a trusting relationship with the study participants (Polkey, 1999). The process of building a trusting relationship with the participants involved the following aspects: (a) offering support, (b) understanding the stories told within their contexts, (c) respecting and valuing the perspective of the participants, and (d) sharing power with the participants. These aspects facilitated collaboration and meaning-making in the stories told throughout my life. For this reason, I found that they could also guide the process of collecting and analyzing data in this study, as I describe next.

I believe the data collection instruments and the role played by me when listening to the participants' stories had an influence on the level of collaboration established during the study (West, 1992). The participants and I started to develop a relationship from the moment that I invited them to be part of the study. The fact that we were colleagues in online courses that we had taken in the past and the fact that I was also a female health professional learning online, facing the same struggles facilitated an initial connection between us. This initial connection was strengthened during the individual interviews when I provided the participants with opportunities to decide what was relevant and important to

be communicated and when I played a listener-teller role, showing interest in their stories and commenting about my experiences to show support for or to sympathize with their experiences. I found that these individual conversations presented a lot of similarities with the conversations I used to have on the telephone with my teen friends because they were also a way to offer support, strengthen trust and share friendship. Once this initial trust was established, the participants felt committed to the study and collaboration was established, facilitating the process of making meaning of the stories told during different stages of the data analysis.

After the interviews, we continued to communicate by e-mail and these e-mail messages were also considered part of the study data because they represented the interactions and collaboration established between the participants and me. The collaborative communication that we created by exchanging e-mail messages enhanced our understanding about the role played by our life contexts in the way we experienced online learning (Bruner, 1996; Gudmundsdottir, 1998). Considering that we were all women with family and work responsibilities, it was important to connect these social aspects to our experiences during the discussion of the study findings. The link between our stories and our life contexts provided us with a background to reflect about our needs as learners and the challenges we faced. My own experiences with

narratives helped me to realize that the integration of the participants' life contexts with their stories was essential. As a nutritionist, integrating the life contexts of my clients with their stories facilitated my understanding of their realities and my provision of nutritional counseling focused on their needs. Moreover, spending time to learn about my participants' life contexts helped me to gain an understanding of my own experience as a female online learner and facilitated a comprehensive interpretation of the stories lived by my participants.

Although I was a female health professional learning online facing similar challenges as the participants, the fact that I was also a researcher in this study placed me in a position of more power than the participants (Polkey, 1999). The creation of power inequalities between researcher and participants could negatively impact the process of establishing trust and the collaboration. The participants could feel intimidated about communicating their thoughts and presenting feedback during the analysis of the data gathered, fearing that their participation would not be appreciated and their perspectives would not be considered knowledge to inform practice. I experienced similar power inequalities when communicating as a nutritionist with my clients. I felt that often my clients were leaving out information or were telling me what I wanted to hear and not what they really wanted to say. These power inequalities between my clients and me represented a real risk to the elaboration of dietary

plans according to their needs. These dietary plans should reflect their needs and life contexts and not only my own perspective as a professional. In this study, I tried to attenuate the power inequalities between the research participants and myself by establishing a collaborative relationship at the outset and by keeping in constant communication with the participants via e-mail. Since most of the feedback provided by the participants on the study findings occurred by the exchange of e-mail messages, the use of e-mail communication allowed me to show the participants that I considered their perspectives the most important source of data to answer the study questions (Gergen & Gergen, 2000). Their feedback was incorporated into the discussion of the results, representing the final result of the collaboration established between us. At the end of this study, we found that this constant communication provided us with a unique opportunity to reflect about our experiences as online learners in terms of how our life contexts influenced them and also in terms of how we were changed as learners by these experiences. These reflections fostered personal growth, preparing us for situations that we may find in the future as learners.

Issues and Constraints of Narrative Studies

I believe that narratives constitute a meaningful and rich source of data to inform practice because they integrate both participants' reflection about their lived experiences and the interactions occurring between the participants and

researcher (Connely & Clandinin, 1988). However, it is also important to acknowledge and address some issues which arise during the process of telling and listening to stories and making meaning of them. In this study, I found that most of the issues related to the roles played by me, power inequalities, objectivity and trust. A detailed description of these issues within the narrative context is provided next.

Participants' ability to articulate their lived experiences in a story.

When the participants in this study were invited to tell their stories during open-ended interviews, it was the first time that they were being asked to translate their experiences into words (Gudmundsdottir, 1998). This meant that it was the first time they reflected about the experiences they lived and the influence that these experiences had on their lives. This was a hard task to perform because it involved the process of remembering the experiences as they happened, the feelings that these experiences brought to them and the context in which they happened (Sarbin, 2001). After remembering their lived experience, the participants still needed to create a logical sequence for the story facts, choosing carefully the words they would use to tell their stories as they understood them (Gudmundsdottir, 1998). This complex process of telling stories took time to occur. I found that it was not realistic to expect that it would occur during a one-hour interview. In fact, what I had after one hour of interviewing

were clues of the real story which needed to be uncovered little by little through constant feedback from the participants, my reflection about my own experiences, comparisons with the literature, and peer and participants' reviews (Gergen & Gergen, 2000; Mildorf, 2002).

As previously discussed, I found that in order to have the participants constantly involved in the different stages of the data collection and analysis, I needed to build a relationship with them. The participants in this study were my fellow students in online courses that I had taken in the past, and therefore, we felt that we already had a connection built by the collaborative learning environments to which we were exposed and by the challenges we faced as online female learners. However, this connection was strengthened during the subsequent stages of the data collection by mutual support and respect for the participants' perspectives. As a result, the participants felt committed to the objectives of this study, willing to be intensively involved in the process of analyzing the study results and presenting feedback on them.

Researcher's ability to facilitate the process of telling stories.

Considering my experiences with stories during my childhood and adolescence, I believe the process of facilitating interviews in narrative research involves listening to the participants' stories and also interacting with them by bringing my own stories to show sympathy and support and to help the

participants to elaborate further on their stories (Gudmundsdottir, 1998). These aspects were integrated into the data analysis when I wrote about my own experiences to support the themes uncovered during the interviews. However, this strategy posed the risk to this study of having more of my own perspective than the participants' perspective in the discussion of the findings (West, 1992). The questions that I needed to ask myself in order to prevent this from happening were: (a) When does facilitating turn into persuasion? and (b) When should I step in and tell my stories too and when should I just listen? When interviewing the study participants, in order to avoid being controlling or persuasive, I decided to bring my experiences to their stories only when they asked me or when we felt the need to further explore certain ideas or to synthesize them. My main goals in applying these strategies were to make the participants feel comfortable about communicating their thoughts without the concern of providing answers just to satisfy me. In other words, I wanted them to feel that their voices were heard and constituted the major source of data in this study.

Judgments regarding which statements from the stories told constitute themes.

As previously stated, due to the complex process of articulating lived experiences in a story, the themes usually do not appear explicit, but implicit as clues which the participants and I had to work collaboratively to solve

(Gudmundsdottir, 1998). For this reason, I could have different ideas than the participants regarding which statements from their stories that constituted themes. I found the need to ask myself: Is there a universal truth to be discovered in narrative studies? The notion of triangulation implies that there is an objective truth to be achieved through the combination of two research methods (Wildy, 1999). However, I agree with Smith and Deemer (2000) that we should accept relativism as a result of our condition of human beings suffering the influences of the particular social and cultural contexts in which we live. This perspective supports the view that there is no objective or universal truth to be discovered in narrative studies. Instead, there are many equally important truths to be discovered. In this study, these multiple truths related to the context in which the participants and I were immersed, and the interactions that occurred between us during the process of collecting and analyzing the study data. Wildy (1999) reframed the notion of triangulation in qualitative studies, creating the metaphor of viewing a statue, which represents the experience lived, through different lenses or angles. The different lenses or angles represent different instruments of data collection and/or the different perspectives of the participants.

The main goal of this study was to explore and reflect on the experiences of female health professionals learning online. Therefore, I applied the perspective that there are no right or wrong perspectives about online learning.

Even if a participant's perspective did not present similarities with findings in the literature or with my personal opinions, it was still considered true knowledge to inform practice. In other words, I did not use a combination of data collection methods for triangulation purposes, but for facilitating interaction, dialogue and critical thinking.

The number of stories.

How much data is enough data can represent a concern for narrative researchers (Cresswell, 2003). Finding a magical number that would guarantee a comprehensive interpretation of the experiences lived by the participants was not my main concern. Since I believe that each story is unique and reflects the life contexts of the participants, I would never be able to incorporate into this study all the stories about online learning from every student who had ever experienced it. Seven participants agreed to participate in this study; however, this number by itself does not tell anything about the truthfulness of the findings. More important than being concerned with the number of stories is being concerned with how well these stories represent what the participants wanted to communicate and their life contexts (Polkey, 1999). I believe that a comprehensive interpretation of lived experiences can be achieved with different numbers of participants as long as the participants agree with the goals of the

study, feel comfortable to tell their stories from their perspectives and feel that their voices are being heard.

Power sharing between researcher and participants.

I believe that in narrative studies, researcher and participants should work collaboratively to make meaning of the stories told (Connely & Clandinin, 1988; Polkey, 1999; West, 1992). However, as I discussed previously, the process of building collaboration with my participants could be jeopardized by power inequities between the participants and myself. For this reason, I found it important to reflect on the following questions: (a) Am I holding more power than the participants? (b) How do power inequalities influence the development of collaboration? In this study, it could be argued that I held more power than the participants because the research questions and the instruments of data collection were mostly developed by me. However, it is also important to acknowledge that participants also hold power when deciding to reveal or not to reveal certain aspects of their stories. If the participants and I had decided to hold on to our power and to resist sharing it, personal growth through collaborative meaning-making would not have occurred because the participants would not have revealed the relevant aspects of their experiences and I would not have developed a comprehensive interpretation of them (Polkey, 1999; West, 1992). In this study, I chose to share my power as a researcher with the participants.

Although I formulated research questions to guide the data collection, they were open-ended questions with many different ways to be answered. In addition, during the process of collecting the data, I encouraged the participants to take the lead in the conversation. During the analysis of the data, I welcomed constant involvement and communication with the participants, showing that their perspectives on online learning were the most important to me. In cases where their perspectives differed from those found in the literature or from my personal beliefs about online learning, I did not attempt to correct or reframe them or to persuade participants to reconsider their perspectives; instead I used these differences to facilitate in-depth reflection and to enrich the discussion of the study findings.

Final Considerations

In the same way that the life contexts of the participants had an influence on the way they interpreted their experiences and told their stories, my life context and previous experiences with narratives also had an influence on my choices as a researcher. As a narrative researcher, I felt the need to reflect about my own context and experiences to understand how they influenced my choice of research topic, my research questions and the strategies applied during the data collection and analysis to address the issues presented.

Telling stories has always been part of my life. As a child, it helped me to develop social skills. As a teenager, it helped me to make sense of the world around me. As a health professional, it helped me to provide appropriate care to my clients. Finally, as a mother, it helped me to connect with daughter by understating her views of the world. After reflecting on my personal experiences with narratives, I came to the conclusion that collaboration was an essential aspect of the process of making meaning of the stories told. However, it is a misconception to assume that collaboration will occur as a study unfolds without any effort to facilitate it. In this study, in order to establish collaboration, it was necessary to build a trusting relationship with the participants by sympathizing with their experiences, offering support and valuing their perspectives.

Furthermore, there were several important issues to address while I was conducting this narrative study. Most of these issues related to my role as a researcher, power inequalities, objectivity and trust. I found that constant communication and negotiation with the participants and the understanding that every story is unique and equally important to inform practice, were essential aspects in addressing the issues cited above and in developing collaboration throughout the process of telling, listening to and interpreting the stories told in this study.

Definition of Terms

Health professionals.

According to the World Health Organization (1986), health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. In this context, this study will define health professionals as all the professionals who are directly or indirectly involved in the promotion or maintenance of physical, mental and social well-being of individuals and populations. This holistic definition of health professionals includes all the following professionals: nurses, physicians, nutritionists, psychologists, social workers, occupational therapists, physiotherapists, health educators, speech pathologists, biologists, home economists, dentists, dental hygienists, health inspectors, and epidemiologists.

Online learning.

The Advisory Committee for Online Learning (2001) defines online learning as an educational approach in which learning is facilitated and supported by networks such as the Internet and intranets. This definition takes into consideration only the technology involved in the delivery of online courses. Therefore, I added to this definition the following pedagogical aspects involved in online learning as articulated in the literature. Online learning is considered a

self-directed approach in which the student plays an active role in the learning process. In most online environments, instead of passively receiving information, students need to be able to think and express their ideas independently (Chapman, 2000; Davidson-Shivers et al., 2001). Additionally, students are expected to develop critical thinking skills and integrate examples of their practice to the theory learned in order to engage in deep discussion about the topics proposed by the instructor (Dolmans et al., 2001; Wadell et al., 1999).

In this study, some participants also used the terms distance education and distance learning to refer to online learning, even though in the literature, the terms distance education and distance learning are related to a type of instruction that follows the correspondence style in which less class interaction occurs and fewer technological communication features are used in the delivery of the course content (Chapman, 2000; Dixon et al., 2001). When quoting participants in this study, I kept these terms as they were used by the participants. However, throughout the study, I used the term "online learning" because it incorporates both the technological and pedagogical aspects of the type of instruction to which the participants and I were exposed.

Distance students.

Individuals who are students in academic institutions, living in the same geographical area or not, who usually do not attend to lectures and classes on

campus in person. Distance students perform their academic tasks from where they live, receiving the necessary information online, in the mail, via telephone and/or by video (Chapman, 2000; Dixon et al., 2001).

Inviting Prospective Participants

The participants in the study were seven female health professionals who were currently enrolled (or who had been enrolled in the past) in online courses for a degree or job training. I directly contacted the participants by e-mail or by telephone since I knew the participants from online courses that I had taken in the past and as fellow students we exchanged e-mail addresses and telephone numbers for future contact. The reason I chose to invite to this study participants who were my fellow students relies on the connection already established between us and the importance of this connection in narrative studies. In such studies, the connection developed between participants and researcher fosters collaboration, which is considered crucial for the process of making meaning of the stories told. The first contact with prospective participants occurred according to the following steps:

1. I sent an e-mail message to each one of them inviting them to be part of the study. In this message, I attached a formal description of the study and welcomed their questions regarding the study and their participation;

2. When they replied to me in the affirmative, I sent a consent form to be signed and returned to me by fax or mail. For the participants who preferred to return the consent forms by mail, I forwarded the consent forms with a pre-paid envelope to the address provided by the participants.

Furthermore, I asked each prospective participant contacted the professors who are part of my thesis committee, and the instructors who taught me during my own distance program if they knew other female health professionals learning online in the same program or in a different program who might be interested in participating in the study. In the situation when a prospective participant was indicated by the individuals cited above, I would ask them to forward a prepared e-mail invitation to her or to give her my telephone number for contact. Once this prospective participant contacted me by e-mail or telephone showing interest in being part of the study, she received a consent form by e-mail attachment or in the mail with a pre-paid envelope to sign and return.

In cases where I telephoned or sent an initial e-mail to a prospective participant inviting her to be part of the study and did not hear from her for a period of two weeks, I sent a follow up message to ensure that the participant received and acknowledged my e-mail. In the same way, I would telephone or

send e-mail messages to participants who answered my first e-mail showing interest in participating in the study but who did not return the signed consent forms.

Instruments of Data Collection within the Narrative Inquiry

In narrative inquiry, the methods of data collection should facilitate the process of telling stories by fostering collaboration between the researcher and the participants and creating opportunities to reflect on the experience lived. In this study, the experiences of seven female health professionals learning online were transformed into stories as they were articulated in individual telephone interviews, journals and e-mail messages, as described next.

Open-ended questionnaire and individual telephone interviews.

The open-ended questionnaire was created as a guide for the individual open-ended interviews (see Appendix A). However, it could also be used in combination or as a substitute for individual interviews according to the participants' preferences. The participants had three options when answering this questionnaire. First, they could choose to answer the questionnaire just by writing and returning it to me as an e-mail attachment. Second, the participants could choose to answer the questionnaire in writing in order to organize their thoughts and then participating in telephone interviews to explore in details the themes identified in the written answers previously provided. Third, the

participants could choose to answer the entire questionnaire during individual interviews without previously writing down their answers.

The individual open-ended interviews took place over the telephone and they were based on the open-ended questionnaire described above (see Appendix A). These interviews lasted approximately 60 minutes. A day before the interview, the participants received a reminder by e-mail of the date and time of the interview and also the open-ended questionnaire as an e-mail attachment. The objective of sending the open-ended questionnaire to the participants one day before the interview was to give them some time to reflect about their answers. I followed up the answers provided during the interviews by e-mail or by telephone according to the participants' convenience.

I was responsible for contacting the participants on the interview day and for the costs related to the interviews. The participants were reminded of the confidential and voluntary basis of their participation, including the fact that they could withdraw at any time from the study or decline to respond to a question. I asked each participant for permission to tape the interview before it started. The tapes were transcribed and the names of the participants were erased from the transcription. The participants received a copy of their own transcript as an e-mail attachment, having the opportunity to withdraw, clarify or elaborate on comments.

My goals in conducting telephone interviews with the participants were twofold. First, I wanted to create a bond with the participants and I found that the best way to facilitate such a bond was having a synchronous conversation with them over the telephone just as I used to have with my friends during my teen years. Synchronous forms of communication tend to be more spontaneous and less informal (Valente & Luzi, 2000). Furthermore, through the participants' voice tone and inflexion, it was possible to identify their emotion and feelings when they were telling their stories. By identifying and understanding these feelings, I could offer my support and create the bond that would be essential to the next stages of the study.

E-mail messages exchanged between researcher and participants.

I welcomed e-mail communications from participants, and these communications were considered part of the study data. My main goal in communicating with the participants via e-mail was to create the notion that data collection in narrative studies is a process of facilitating interaction and building knowledge through constant communication and negotiation. The e-mails exchanged between the participants and myself helped us to improve the bond that we created during our conversations over the telephone and to inform my understanding of the participants' life contexts. In these e-mails, we not only shared information about the study, but we also shared aspects of our lives such

as family and work experiences that influenced our experiences as online learners. The exchange of e-mails between the participants and me was extremely helpful during the process of analyzing the study data because it provided us with the flexibility to share and collaboratively construct the study findings. Also, it helped me to ensure that the perspectives of the participants were respected and valued as knowledge because participants checked their interview transcriptions and the study results via e-mail.

Journals or notes written by the participants and the researcher.

While taking online programs, some students decided voluntarily to keep a journal or notes about their experiences as students. Also, in some online courses, journals and individual notes were part of the instructional design. The journals written by the participants and me constitute narratives written during the moment we were experiencing online learning. The process of writing these journals involves reflection and self-evaluation. Moreover, the journals constitute powerful instruments to facilitate personal growth and to understand the context in which the experience occurred. My main goal in sharing these journals was to compare the stories written in past with the stories we told in the present during the telephone interviews. By doing this, it was possible to compare the similarities and differences between the ways we described our experiences in the past and present, to reflect on our growth as learners and to discuss if our

perceptions about learning online changed during the years and according to our life contexts.

The three data collection instruments applied this study--individual telephone interviews, journals and e-mail messages--facilitated collaboration and honoured participants' perspectives and contributed to an understanding of the participants' contexts. Furthermore, the combination of these three instruments of data collection facilitated viewing the participants' perspectives through different lenses, providing a comprehensive understanding of the experiences of female health professionals learning online.

All the data gathered from the methods described above were copied to CDs and stored in secure confidential files to which only I, the researcher, had access. These data will be kept safe for the minimum of five years following the completion of the study and then they will be destroyed.

Limitations and Implications of the Data Collection Instruments

According to the data collection instruments applied in this study, I anticipated dealing with the following limitations: (a) Participants' difficulty in expressing thoughts through writing, (b) participants' tendency to focus on what is being asked instead of bringing new information to the study, (c) loss of visual information, and (d) loss of spontaneity in the communication (Cresswell, 2003; Morse & Field, 1995). However, considering that writing is a usual form of

communication in online courses, I assumed that participants would be able to express themselves in writing with little difficulty. Moreover, I also expected to minimize the limitations previously described through the combination of the four data collection instruments used in this study and by the strategies described next.

Using open-ended questionnaire for individual interviews.

In this study, I created an open-ended questionnaire for the interviews because after experiencing online learning and conducting a detailed literature review about this topic, I was able to identify the most relevant questions to ask the participants. It could be argued that when the researcher asks the participants to answer certain questions, they tend to focus on the questions proposed by the researcher, not bringing any new aspect to the conversation different from those already stated by the researcher (Morse & Field, 1995).

In order to minimize this limitation, I structured the questionnaire in an open-ended manner to provide the participants with the opportunity to explore their experiences as online learners and to talk about the themes that are relevant to them (Cresswell, 2003). Also, by letting the participants choose how they preferred to answer the open-ended questionnaire--in a written format, in a written format followed by an interview, or in individual interviews--I expected that they would choose the way to best communicate their thoughts.

Considering that the participants had the choice to answer the open-ended questionnaire during individual interviews, I minimized participants' difficulty in expressing thoughts by writing. However, loss of non-verbal communication was still a limitation since most of the interviews were performed over the telephone. The decision to use telephone interviews in this study was based on the wide distribution of participants across Canada and on the affordability of the method. I expected to minimize this limitation by asking the participants to check the transcripts to ensure that no aspects of the conversation were missed or misunderstood due to the lack of visual communication.

In all the instruments of data collection used in this study, lack of visual communication was considered the most difficult limitation to control. This limitation is expected in research involving distance students due to the geographical distance between participants and researcher and the need to use types of communication media which do not involve face-to-face interaction (Gillis et al., 2000; Valente & Luzi, 2000).

Protecting Privacy and Confidentiality

Prior to answering the open-ended questionnaire and participating in individual interviews, the participants were reminded of the volunteer basis of

their participation in the study and the fact that they could withdraw from the study or decline to respond to a question without any penalty. During the data analysis, I erased or paraphrased any words or expressions contained in passages quoted from the participants which could identify them. I did not associate the research findings with the real names of the participants or with any characteristics that could identify a particular participant.

Additionally, I ensured that all the uses of these study findings would be handled in compliance with the ethics standards stated in the consent form. I anticipated using the research data for the following purposes: (a) Master's thesis; (b) dissemination in other forms including journal, conferences, and workshops; and (c) as part of data for future research.

In situations when the participants decided to withdraw from the study, I asked them for permission to use the data gathered until the moment of their withdrawal. If the permission was not granted, the data related to the participant leaving the study was destroyed and therefore not used in the study. In such situations, I continued the study and used the data of the remaining participants obtained from the data collection instruments previously described.

After I sent out invitation messages to my fellow distance students, six of them agreed to do interviews over the telephone and one agreed to provide written answers to the questionnaire and to send it back to me as an e-mail attachment. Also, one of my fellow students shared with me the journal she wrote while taking online courses.

After transcribing the interviews, I started the data analysis. I found that my early experiences with narratives, which I discussed previously, had a great influence on the way I analyzed this study data. As in the game that I played as child, "the hidden story" in which the sentences created by the children needed to be connected to form one great story, all the interview transcriptions needed to be connected in one great story. Considering that each interview transcription was a story per se and not just a couple sentences as in the "hidden story game," I had to identify the most important themes of each transcription and weave them together into one great story about female health professionals learning online.

In order to identify the major themes in the data collected, I read through each one of the interview transcriptions and I applied the holistic or sententious approach to isolate the main thematic aspects (Cresswell, 2003). By using this approach, I identified five major themes which were the following: (a) the

reasons for becoming a distance student, (b) learning preferences and needs of distance students, (c) challenges of being a distance student, (d) strategies to cope with the challenges, and (e) rewards of being a distance student.

In the preliminary coding stage of the data analysis, I coded threads of the interview transcriptions according to the five major themes previously identified. Once this preliminary analysis was finished, I read through the data that I had organized under the five major themes and I identified several interrelated secondary themes (see Appendix B). In order to identify these interrelated themes, I applied the selective or highlighting approach (Cresswell, 2003) to isolate phrases or statements that were essential to interpret the experiences of the participants.

Then, I coded the gathered data by using the computer software Microsoft Excel and created columns for each one of the secondary themes uncovered by the selective or highlighting approach (see Appendix B). Once all the data were coded, I had five large clusters consisting of the major themes uncovered during the holistic or preliminary analysis, with several interrelated secondary themes isolated during the selective or highlighting approach.

By reading all the interview transcriptions, applying the holistic approach, uncovering the main themes, then applying the selective approach, and uncovering secondary interrelated themes, I was able to develop the headings

and subheadings of the story about female health professionals learning online just as the sentences in the story game of my childhood. The next step of the data analysis was to connect them in a meaning sequence creating one great story. Once more, I reflected on my own experiences with narratives and I realized that context and collaboration were essential in order to connect these themes into a story. During my experience working as a nutritionist, I learned that the life contexts of my clients played a very important role in my understanding of their dietary stories. In the same way, by understanding that our life contexts, including our family and work situations, also influenced our experiences with online learning, I was able to articulate a comprehensive interpretation of the themes uncovered in the interview transcriptions with the participants.

In order to provide context for the findings and to help the reader to understand the participants' backgrounds and perspectives on online learning, I asked the participants to talk about their life contexts and I wrote a brief description of each participant which I used as background to provide explanations for the themes uncovered. Information that could identify the participants was omitted or paraphrased.

These are the women who told me their stories:

Participant 1: A full-time recreation therapist in British Columbia, married with two children: a toddler and a baby. In her story, she talked about the challenges of being pregnant during the online program while working full-time. During the program, she valued the flexibility that online learning offered to her, but she did not enjoy it as much as her undergraduate degree because of the lack of face-to-face interaction. She thought that instructors should present the course content in a variety of ways and this variety should also be reflected in the assignments. Moreover, she viewed technological support as crucial for students to perform well in online courses.

Participant 2: A full-time nurse with a manager position in Saskatchewan, married with four children, three adult children and one preschooler. This participant already had some experience with distance learning. In her story, she mentioned the challenges of being a student and having a demanding job. She considered her good organizational skills and motivation the reasons for her success in online learning. Although she understood the advantages of using a variety of communication media in the delivery of online courses, she also thought that such an approach could reduce flexibility, which in her opinion is the major advantage of online learning.

Participant 3: A full-time health promotion consultant in Ontario, single. In her story, she talked about her feelings of frustration in response to not getting

the appropriate support during challenging situations and about the rewards of belonging to a community of learners. She felt that online learning suited her because she is an introverted learner who prefers to reflect before coming forward with an answer. Also, she pointed out that online learning provides adult learners with the opportunity to be in control of their learning. She thought that instructors could support learners by being constantly present in the bulletin board mediating the discussions.

Participant 4: A part-time health educator in Alberta with two adult sons, taking care of aging parents. In her story, she talked about the flexibility offered by online learning for students living far from the universities and about how her confidence as a professional increased due to the knowledge and skills she gained during the program. She thought that instructors should acknowledge the students' professional and academic backgrounds in order to provide the right amount of support and to not be too controlling. She developed her own source of local support by starting periodical meetings in her city for distance students interested in getting together to share experiences.

Participant 5: A part-time community nurse in British Columbia, single mother of a toddler. This participant already had some experience with distance learning. In her story, she talked about the importance of having a mentor. She felt that the lack of face-to-face interaction was the reason why she was not able

to develop this mentoring relationship with an instructor. She said that she considers learning a social experience and prefers learning environments that foster experiential learning. In her view, instructors can support students by providing constant feedback.

Participant 6: A full-time health educator in Ontario, married without children. In her story, she talked about feelings of isolation caused by the lack of face-to-face interaction and the challenges caused by language barriers. She pointed out the need to create strategies to best support online learners. She said that she considers herself a visual learner and stated that most online environments are not always supportive of visual learners. She thought that instructors could support students and improve their motivation by promptly answering students' questions and by providing students with constant positive feedback.

Participant 7: A full-time nutritionist in Alberta, married with one toddler and pregnant with her second child. In her story, she talked about the overload of work in online courses in comparison to face-to-face courses. She said that she prefers learning in a well-organized environment in which the learning goals are clearly stated and the main aspects of the course content are presented in a logical way. She thought instructors should be constantly involved in online discussions, mediating and summarizing them, and she felt that the addition of

visual information and communication media could enhance the learning experience for distance students.

Besides reflecting on and integrating the life contexts of the participants into the study results, I also considered it important that my experiences as a female learning online were incorporated to the discussion of the findings. From my experience with narratives during my childhood and teen years, I learned that telling stories and making sense of them was an interactive process in which the story listener could not step aside and just listen to the story teller; instead I needed to play a listener-teller role and bring my own experience to reflect on and discuss further the experiences recounted by the participants.

The final aspect of my research that I found important to integrate into my data analysis was my respect for the participants' perspective. This aspect related to my own experience of telling stories to my daughter. In the same way that my daughter had different views regarding how to interpret the stories at bed time, my interpretation of the study findings could also be different from the participants' interpretations. For this reason, I invited the participants to provide their feedback on the findings. In order to increase the level of response from the participants and to improve readability, I summarized the main findings in a topic format and sent this summary by e-mail to the participants for feedback.

Five participants replied, providing valuable feedback which I incorporated into the findings of the study.

Finally, since one objective of this study was to identify online learning strategies to best accommodate the learning preferences and needs of female health professionals learning online and to reflect on the existing literature on gender issues and online learning, I also compared and contrasted my findings with the existing literature, creating explanations for them based on the characteristics of the population studied, including their life contexts, and the methods applied in the study. Considering that one of the goals of applying narrative inquiry was to advance the existing knowledge about gender issues in online learning and to facilitate personal growth based on reflection on the experiences lived by the participants, I concluded the data analysis phase of this study by presenting questions for further research and the implications of the findings discussed here for the design and instruction of online learning for female health professionals.

The Reasons for Becoming a Distance Student

Geographical and schedule flexibility.

Most of the participants decided to become distance students because of the geographical and schedule flexibility offered by online learning. They appreciated the fact that they were able to pursue additional education without having to move to another city, quitting their job or being away from their family while attending classes. Due to fact that all the participants were adults learners with career and family life established, they seemed to have taken these aspects into consideration when deciding about their education.

Especially for the participants with young children, online learning represents a chance to pursue further education without being away from home. As one participant put it, "The flexibility of the program offers you a lot. (...). The fact that you can continue your work and do what you are doing and fit it into your schedule" (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003). Another participant commented,

> Distance Education enabled me to continue full-time employment as I could fit my studies into my work schedule better than rigid schedules of on-campus university classes. Having children still at home, this flexibility

> also enabled me to meet all my home obligations. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

Participant 3 echoed these ideas, emphasizing that pursuing further education may require a long-term commitment that many mature students could not make without the option of distance education:

> And I think certainly for we mature students who have all these other things going on in our lives, like we have a job and we have a family (...) and we can't put all of this aside for three or four years to go to school. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

Additionally, according to the passage quoted below, online learning also represents a valuable opportunity for individuals who live in remote areas to pursue additional education without having to leave their communities: "I live a very long way from the university and I was not prepared to leave my family, but I wanted to do a master degree. So, distance learning was the only alternative for me" (Participant 4: health educator in Alberta, interview, August 20, 2003).

However, there were also several participants who live in big centers who decided to enroll in online learning because of the characteristics and quality of the program offered online or because they found it more comfortable and convenient to pursue their education from home and not to have to commute to

the university campus and spend several hours attending lectures. One of these urban participants explained her reason for choosing to study online: "It was just a great program and I guess the main thing was that I wanted to maintain my life here [in Vancouver] and not move to a different city" (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003).

Participant 3 talks about flexibility in terms of being able to study in the comfort of her home and not having to commute to go to school after a tiring day of work. She used the expression "I needed to be kinder to myself" to say that she needed to put her needs as an adult learner first and not sacrifice her whole life to get a degree:

> I couldn't see quitting my job to go some place else to go to school. (...) I saw that there was the distance option and that was a really logic[al] way to go. (...) By the time I was looking to do this degree, just the thought of going up to the university at night and being there until 9:30 at night and have to go all the way across the campus or to where the car was and dig it out of two feet of snow, I just couldn't face it. I needed to be kinder to myself at this point. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

These results relate to the findings in the studies conducted by Chapman (2000) and Zimmerman et al. (1999), in which health professionals also identified online learning as flexible. However, participants in those studies seemed to focus mostly on the geographical flexibility that online learning offers to health professionals who live in remote areas and who want to pursue further education. In the case of this study, the participants equally valued the geographical and schedule flexibility offered by online learning, and this understanding of flexibility brings the perspective that online learning can be an attractive option for health professionals living in both rural areas and main cities. This idea challenges the notion that online learning is only for individuals living in remote areas who otherwise would not have access to a university.

Another aspect to emphasize is that many female students who choose online learning because of its flexibility may end up being caught in a routine of stress and frustration trying to accommodate being a student while balancing their work and family responsibilities. Although online learning presents some schedule flexibility, there are still readings to do, assignments to submit and discussions to participate in. Allocating enough time each week for all of these tasks can be a real challenge for women with children at home and full-time jobs (Kramarae, 2001). The belief that online learning is so flexible that it can fit in everybody's schedule is a misconception.

When I started my online program I decided to enroll part-time. Initially, I assumed that I needed to dedicate approximately twenty hours per week for my studies, which meant that I could still work part-time. However, my assumption was wrong, and many weeks, I had to put in more than twenty hours to cope with demands of the courses and be successful. As a consequence, I had to reduce my hours of work and my time with my family to do my studies.

The issue of workload in online learning is a difficult one to solve because there is a program to be delivered and the students also need to be assessed in the skills learned. Some strategies to attenuate this problem are discussed further, but in my opinion, it is important that students acknowledge these aspects at the moment of their enrollment in order to reflect about how they will deal with the potentially heavy workload they will face.

Previous experiences with distance education.

Some of the participants interviewed, such as participants 2 and 5, already had some experience with distance education, which, in combination with the flexibility offered by it, made them willing to try distance education again. It seems that students who were previously successful in a distance program are more likely to try it again. As one participant put it, "I had some experience with distance education before, (…). So, I was comfortable with doing it" (Participant 5: community nurse in British Columbia, interview, August 13, 2003). The

previous distance courses taken by some of the participants followed the correspondence style with less interaction with classmates and instructors. One participant explained, "My prior experience with distance learning although the more traditional correspondence style, was very positive, so I sought out a distance program for my Master's" (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003).

In the literature reviewed in this study, there was no link between the previous experiences of distance students and the role that these experiences played in choosing distance education again. In this study, some participants related their choice to become distance students to their previous experiences and they also frequently compared the program they had previously with their current one. As time goes by and more online programs are offered, the chances of having students who were previously enrolled in traditional distance programs will increase. As a result, they may bring their previous experiences with online learning to the courses they are currently taking.

This fact represents both an advantage and a challenge for instructors and course designers. The advantage is that students may bring some expertise to the online environment in terms of dealing with the technology applied in the delivery of such courses. The challenge is that students may also bring expectations regarding how the course should be designed and taught. If they

had a previous positive experience with online learning, they may tend to believe that this experience will be repeated in the current online course. If they had a previous negative experience, they probably will not be willing to try online learning again or they probably will reflect about what went wrong in order to choose an online course with a design that will provide them with what they need to have a successful learning experience. Especially for instructors teaching online, knowing in advance how many students in a class were previously enrolled in online learning, what type of learning environment they were exposed to, and what kind of experience they had can help them to deal with the students' expectations.

Being in control of the learning experience.

After reflecting about the answers provided, I realized that the flexibility of online learning and successful previous experiences with such learning may not have been the main factors influencing the participants' decisions to enroll in online learning. According to the findings of this study, it seems that these individuals decided to become distance students because they could be more in control of their learning experience. In the following quoted excerpts, it is clear that the participants appreciate being in control of their education by choosing the learning strategies that facilitate their learning and the hours that they will allocate for their learning. In other words, they can choose when to access the

course material and instructors and how to learn. Instead of planning their lives around weekly lectures on campus, the participants preferred to do the opposite and fit their studies into their already established lives. Participants 2 and 3 were both full-time employees in the health field with demanding jobs; therefore, being able to fit their learning into their busy schedules was considered another good reason to pursue a degree online, as Participant 2 explained:

> I think this is the only way to acquire a degree and have the rest of your life only minimally affected. Despite there being certain readings that had to be done by a certain time, certain amounts of postings within set time frames, and due dates for assignments, I still felt very much in control of my learning. This was because I was able to fit it into my life in ways that worked for me. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

Participant 3 expressed similar feelings:

> (...) and especially with university learning with adult[s] it [online learning] is certainly for most, the way you learn the most because you will be defining the terms of your own learning and for adults I think that's what works the best. So, I think it's a good thing, (...). As an adult, I have a lot of other commitments in my life and it respects my decision

about how I am going to arrange to fit the different components of my life together. Rather than saying here is the way it is take or leave (...). (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

It was interesting to notice that in the literature reviewed, the words independent and self-directed seem to appear often when authors such as Chapman (2000) and Davidson-Shivers et al. (2001) talked about the role of the students in online learning. However, in the same studies, the idea that distance students are learners who like to be in control of their learning experiences does not appear. According to the participants interviewed, being in control does not seem to be synonymous with being self-directed or independent. Being in control seems to relate not to students' learning independently but to the core principles of adult education such as the need to know why, what and how to learn, which are stated in the work of Holton et al. (2001) and Jones (2001).

Most health professionals choose to become students to update their knowledge and achieve career growth to deal with the demands of the job market (Chapman, 2000; Dixon et al., 2001). However as adult learners, they also have to fulfill other responsibilities such as family and work (Kramarae, 2001; Merriam, 2001). For these reasons, they seem to appreciate learning material which will have an immediate application to their practice (Holton et al., 2001).

Also, they seem to prefer well-organized learning environments where their learning goals are clearly stated and the strategies to achieve these goals are also structured. In other words, these learners feel they have no time to waste and they are also committed to getting a high level of education that will equip them to deal with the demands of their workplaces. They believe they can achieve their goals through online learning as long as online programs are designed to reflect and respect their needs and learning preferences as discussed next.

Distance Students' Learning Preferences

Being an independent and a self-directed learner.

Most participants described themselves as independent or self-directed learners. The participants believe that they always had these abilities; however, they agreed that these characteristics became more prominent in the online environment. According to the following quoted excerpt, they seemed to agree that in order to succeed in distance education it is important to develop independence and self-directedness: "I think I've always been as an independent learner, but I learned more about that in this program. It sort of enforced that I do learn independently" (Participant 6: health educator in Ontario, interview, August 5, 2003).

For the students interviewed, being independent and self-directed means having motivation, good organizational skills and the discipline to carry on with

their studies and to manage to deliver the tasks requested even during busy life periods. One participant put it as follows:

> I don't think distance education is for everyone either because it does take a certain amount of discipline; I guess a person needs to be a self-started and you know, be able to stick to a routine and make it work the best (Participant 7: nutritionist in Alberta, interview, August 21, 2003).

Another participant commented,

> (...) if you were accepted into a master's program would imply that you have the mental discipline and the capacity to manage without a whole lot of direction and without a fixed time table for when to show up and sit in the desk and listen. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

Participant 2 said that she believes that what made her succeed in online learning was their high motivation and organizational skills. Without these two factors, she would probably have quit the program for not being able to allocate the necessary hours for her studies:

> I very quickly organized my schedule so that deadlines for school were incorporated into my daybook and I could plan the time that I needed for reading, assignments, online discussion and teleconferences. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

In analyzing these findings, I noticed some discrepancies regarding what is considered self-directed in the literature and what is considered self-directed by the participants interviewed. In the literature, Chapman (2000), Davidson-Shivers et al. (2001) and Wadell, et al. (1999) seem to relate self-directedness to the ability to learn independently with less support than in face-to-face instruction. However, the participants in this study seemed to think of themselves as self-directed in terms of knowing what their needs are and being committed to their learning tasks. These findings suggest the notion of the adult learners as consumers. According to this notion, adult students are committed to their learning and willing to do their part in the process as long as the academic institutions and instructors do their parts as well (Jones, 2001; Merriam, 2001).

Furthermore, it is not correct to assume that every distance student will be independent and able to learn with less support and guidance than students learning in face-to-face classrooms. In Carnwell's studies (1998; 2000), nursing students presented different levels of independence and self-directedness and, as a consequence, different needs for support and guidance. Students learning online may require the same level of support of students attending classes on campus; the difference is how this support will be provided, as discussed next.

Being supported by the instructor.

As previously mentioned, distance students consider themselves independent in terms of their motivation and organizational skills; however, they still need support from the instructor. One participant noted, "although I am independent, I like to have lots of support as well" (Participant 6: health educator in Ontario, interview, August 5, 2003).

For the students interviewed, being supported means having the instructors constantly visiting the online conferencing bulletin board in order to keep the students focused, to summarize the main points of the discussion, to enrich the discussion with examples from their own practice, and to acknowledge the contribution of all the students. This perspective is evident in the following quotation: "I think the (...) instructor role is to mediate (...) and I think the instructor can do a lot to help those students understand that their experiences and what they bring are also very important" (Participant 4: health educator in Alberta, interview, August 20, 2003). Another participant explained a supportive instructional strategy that she found helpful:

> I think that one of the things that worked really well was when instructors would come to the discussion early in a posting week and then would pull back and then would came back towards the end of the week to help to put things together and to add some more comments or redirect

(Participant 3: health promotion consultant in Ontario, interview, August 8, 2003).

Participant 7 also focused on the role of the instructor in online discussions:

> Well, I think they should be a moderator of the discussion. If the discussion is getting off course, or you know, off of the tangent, they need to bring it back and focus a little bit more on things that look relevant for the course. I always enjoyed the insights that the instructors provided (Participant 7: nutritionist in Alberta, interview, August, 21, 2003).

Some students expressed the view that the type of the support provided by the instructor in the online discussions would vary according to the learning preferences, level of experience of the students in the online environment and their professional backgrounds. For example, learners who have not been previously exposed to online learning may need support regarding the technology and the communication issues of learning online. Also, learners who are recent graduates with less work experience may find it difficult to bring examples from the practice to assignments and discussions. These learners will need support from the instructor in terms of acknowledging that their contributions are also relevant to the learning process. Here is what one participant said:

> I think sometimes the instructor needs to summarize and also augment the discussion with further depth and other times they just need to sit back and let the discussions go. I always appreciated the instructors that did a summary of what they ha[d] been hearing for the past few days (...). If those classes would have, for example, you know, recent university grads, people who are not in the field yet, I think the instructor would have had a more much active role. (Participant 4: health educator in Alberta, interview, August 20, 2003)

In order to provide students with the right amount of support that they need, the instructor should get to know their students' learning preferences, professional backgrounds and level of experience with online learning (Smith, 2001; Carnwell, 2000). By acknowledging what the expectations of the students are regarding their role as instructors, they will be able to provide students with the right amount of support without being too controlling. Participant 4 summed up the style of instructional support that worked for her:

> I have got two supervisors who provide me with mentoring when I need (...). They do provide me with feedback when I need [it] and direction and so on. I think I wouldn't want somebody who is really, really hands on who was trying really hard to direct the direction of my study. I have

> been appreciating to be able to set that direction primarily. (Participant 4: health educator in Alberta, interview, August 20, 2003)

Two strategies that instructors can apply to identify the expectations of their students regarding the appropriate level and type of support are to provide students with the opportunity to talk about their personal and professional backgrounds in the beginning of the course and to ask students about their expectations regarding the course and the instructor. In the most of the online courses that I took, students and instructors were supposed to introduce themselves, provide a brief description of themselves and the comment about the reasons for taking the course. This strategy was helpful for both identifying the expectations of the students and bringing the class together as group.

Participant 5 expressed the view that students' performance can be improved and their confidence boosted if the right amount of support is provided by the instructors: "(…) the first instructor I had (…) was so wonderful because she was very nurturing, she was very willing to give a lot of positive feedback and I needed a big confidence (…)" (Participant 5: community nurse in British Columbia, interview, August 13, 2003). Furthermore, by receiving the right amount of support from the instructors, distance students feel connected and attuned with the course presented:

> For the most part, I felt very supported by the instructors in terms of positive feedback and knowing like what they are looking for when they asked a question or gave us an assignment. I felt connected and I understood what they were asking us to do as students. (Participant 5: community nurse in British Columbia, interview, August 13, 2003)

Finally, Participant 1 mentioned that she expects the instructor to help her with problems regarding the technology used in the delivery of online courses. According to her, problems with technology can hold students back, impairing their learning if not immediately addressed:

> Oh, and the support, you know, when you are designing a course, I guess the instructor needs to really think about how they are going to support the students (...). So, we need support especially with technology, I mean if you have computer problems, it can be a very difficult, you need to have a way to quickly be able solve those problems (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003).

These findings present some similarities with the literature. In the studies of Davidson-Shivers et al. (2001), Dixon, et al. (2001), and Soon et al. (2000), receiving support from the instructor was considered an important factor in order to achieve academic success and this support was translated in terms of constant feedback, encouragement and assistance with the technology. These

authors did not comment about how the type of support from the instructor can vary from class to class according to the students' learning preferences presented.

This aspect of instructional support was discussed in detail in the literature on learning preferences and gender by Cravener (1999) and Gillis et al. (2000) and Smith (2001). These authors reinforce the findings of this study by stating that understanding the students' learning preferences can help instructors and designers to best plan online courses. For example, if instructors are able to identify in their classroom a large preference for visual information, they can help to improve the learning and the level of students' satisfaction with the instructional design by offering a well balanced mix of texts, diagrams, images and graphics (Carnwell, 2000; Vande Vusse & Hanson, 2000)

Furthermore, Smith (2001) and Gillis et al. (2000) discussed the gender implications for instructional designs. According to these authors, receiving the right amount of support is crucial for female students. In this study, the need for support and the quality of the support received was a strong theme in all the interviews, reinforcing the notion that gender is another aspect to be taken into consideration by instructors teaching online courses (Campbell, 2000; Gillis et al., 2001; Kramarae, 2001; Smith, 2001). Another important aspect to take into consideration when designing online courses for female health professionals is to

choose designs that promote interaction and collaborative learning (Cummings et al., 2002; Driver, 2002; McConnell, 1997; Swan, 2001).

Interacting with other classmates.

The participants seemed to consider learning a social experience; they appreciated having the opportunity to discuss and share their experiences with other classmates. Here is one participant's view:

> Oh, yeah! I don't think you can learn in isolation with other people, (...) Even if you are sitting at home doing your readings, you still need to have the opportunity to have a discussion, so you can see other people's perspectives on the same material (...) and you can have the opportunity to exchange ideas and learn through other people's experiences and you know, just even practicing put[ting] our thoughts together about what you just read by articulating with another person. (Participant 5: community nurse in British Columbia, interview, August 13, 2003)

> As a learner, I enjoyed learning from the perspective of other students, thinking about their comments. So it provided me with a really important practice group that I could discuss things with and learn from. (...) Well, I think the collegiality with the other people in the class was really good. (Participant 4: health educator in Alberta, interview, August 20, 2003)

The participants considered the online discussion a fundamental part of being a distance student. The students expressed the view that they would not achieve the same quality of learning if these discussions were not part of the course design. Some students interviewed, such as Participant 5, had previously been involved in distance courses which were less interactive, such as the traditional correspondence courses, and they

considered the opportunity to interact as a group rewarding: "I would not like to try to do what we were doing without those online discussions, just like a traditional correspondence course that would not be as nearly rewarding" (Participant 4: health educator in Alberta, interview, August 20, 2003). One participant commented,

> (...) I was comparing it to my last experience at (...) where a lot of time I was sitting down at home watching a tape and most of the video tapes were the instructor talking for like 60 minutes, giving a lecture and I almost [would] fall asleep. So, the interaction with the students in the WebCT, I was really impressed by that. (Participant 5: community nurse in British Columbia, interview, August 13, 2003)

These findings on collaborative learning also relate to the literature on gender issues and online learning pedagogies. Gillis et al. (2000) and McConnell (1997) found that female students seem to prefer learning environments where

they can express their thoughts and feel respected and supported. In terms of pedagogies for online learning, the constructivist approach is considered the best approach for learning online because it facilitates group discussion and collaborative learning (Jonassen, 1991, 1995). The participants seemed to agree that being able to present their ideas to the group and to learn from the perspectives of other classmates enhanced the quality of their learning as is discussed in the work of Cummings et al. (2002).

Learning through experience and context.

The distance students interviewed felt that being able to experience in real life what is being taught is an important part of their learning preferences. They expressed the belief that they can learn best if they are able to apply the theoretical concepts in a real work situation. One participant reflected, "I think that the way that I actually learn things is hands on, I guess by applying it" (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003). Another participant commented,

> I learn best through experience so, for example (...) I seem to have the ability to retain the information better if I encountered a patient with that disease. (...) So for me, I think [it] is [important] to have the opportunity to experience whatever is I am learning and incorporating it to my practice.

(Participant 5: community nurse in British Columbia, interview, August 13, 2003)

The participants understood the importance of theoretical concepts in a graduate-level course; however, they felt that, when designing online courses, instructors should try to provide students with opportunities to translate theory into practice. Commenting on a particular course, one participant noted, "I would have liked more hands on work and less theory in that course, but I see the need for the theory" (Participant 4: health educator in Alberta, interview, August 20, 2003). Another participant reflected on how an experiential component could enrich a course:

> I think it would be nice to incorporate opportunity to spend time with the researchers in a practicum setting. So, you can see how these skills are applied in real life. I think that could have been a great course. (Participant 5: community nurse in British Columbia, interview, August 13, 2003)

Participant 1 commented on how she was able to apply her online learning in the "real world": "I was able to take all the theoretical stuff that we learned in terms of qualitative research and applied [it] in a real community setting so that was very helpful. So, it's always nice to actually take what you learn and find that it

can be useful in the real world. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

Holton et al. (2001) and Jones (2001) maintained that one of the core adult learning principles is that adult learners appreciate seeing the immediate application of what is being taught. These findings also relate to the literature on situated learning (Dolmans et al., 2001; Edwards et al., 1999; Wadell et al., 1999). The situated learning pedagogy is based on the constructivist philosophy. According to this pedagogy, effective learning can be achieved if students applied their previous experiences when solving a case study proposed by the instructor. When trying to identify solutions for the case study proposed, students need to reflect about similar situations that they encountered in their practice and link them with the new concept learned (Dolmans et al., 2001).

The situated learning pedagogy has been used successfully in online learning environments for health professionals because it allows students to make theory-practice connections through elaboration of knowledge based on previous experiences and new

information (Wadell et al., 1999). Gillis et al. (2000) emphasized the use of situated learning when teaching female students. According to these authors, female students can increase their motivation and self-efficacy if they feel that the experiences they bring are valued and recognized as knowledge.

The fact that the participants in this study prefer contextual and experiential learning poses a challenge to online learning which relies mostly on theoretical knowledge conveyed by the predominant use of reading and writing and less practical experience. Assignments that encourage the students to apply in practice what was learned and discussion questions that encourage students to talk about their working experiences in relation to the concept learned can be useful strategies to cope with this challenge (Edwards et al., 1999; Roberts, 2002).

An example cited by Participant 4 regarding how assignments can be more practical and less theoretical suggested the value of having students perform a qualitative interview, record it, transcribe it, code the data and sort it into categories of themes, and then reflect on the challenges involved in all these steps, instead of just having students reading the studies in the literature about qualitative methods of data collection and summarizing them in the form of essays. Another example would be using the online bulletin board not only for discussion related to the readings assigned, but also as a space for the students to work in groups to solve case studies.

Needing some structure.

When asked about their learning preferences, the participants also mentioned that they need to see some structure regarding the course content. They can feel lost in the large amount of readings if some structure is not

presented by the instructor. When I asked about what kind of structure they were expecting to have from the instructor, they said that they appreciated having notes for each course presented in a logic sequence using the headings and subheadings format. According to them, sometimes it was difficult to identify in the readings what was essential for their learning. They argued that in a face-to-face class situation they would have the lecture notes to look at and they think these notes are sometimes missing in online courses. One participant commented on the value of having helpful supporting materials available online:

> So, when they added this third component, the visual representation of the course, the notes, the main points, I was really appreciative of that because for me, it helped me to tie things together and [I] referred back to those a lot. (...). Well, I definitely think it's important to include those course notes or those lecture notes in the design of online courses. It's really helpful for the learners to have some sort of summary at the end of each unit or chapter because you don't really get much interaction with the professor. So, it's nice to hear or to see from their viewpoint what the key points are and that would be one of my big recommendations for them. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

Other students interviewed talked about the need for structure in terms of having the instructor setting up deadlines for readings, online discussion and

assignments. They agreed that having these deadlines helped them to stay focused on their learning:

> I found the combination of the online forum with the weekly discussions and the assignments with the deadlines. (...) critical for me to complete, to get through the courses. I have a really, really busy life, so those force me into finishing things. (Participant 4: health educator in Alberta, interview, August 20, 2003)

The need for structure expressed by the participants in this section can be classified into the following three categories:

1. Cognitive: with the use of advance organizers that display course information in logic and sequential manner, emphasizing the learning goals and the main ideas of each unit.
2. Contextual: with the use of examples from the practice to illustrate the concepts learned, placing theoretical concepts within a real context.
3. Temporal: with a schedule of tasks to be performed and realistic deadlines, giving the students chances to accommodate their studies into their busy lives.

It seems that in courses early in their programs, students need more structure to guide their learning. Students felt that they needed less structure in courses taken towards the end of their programs because they had accumulated

enough knowledge regarding the program content and they were used to the format of online courses. They believed that, at this point, too much structure would compromise the flexibility of online learning. One participant commented on how she would have preferred less structure in one of her final courses:

> I guess in the early courses, the structure was helpful because you don't really know what is going on. (...). So, considering all the knowledge and experience that we had, I think for a capping exercise it should have been much less structured for a course like that. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

These findings also relate to the literature on gender and adult learning. McConnell (1997) and Smith (2001) concluded that female learners tend to prefer well-organized course designs in which the expectations of the instructors regarding the assignments and learning goals are clearly stated. Especially for distance students starting their programs, understanding what is expected from them can reduce the feelings of anxiety and help them to concentrate on their learning goals (Dixon et al., 2001; Soon et al., 2000).

According to the participants in this study, receiving support, having structure, and learning through experience and interaction are the most important aspects to take into consideration when designing online courses. However, in order to create online learning environments that are supportive of

the female health professionals learning online, it is crucial to understand the social context in which they are immersed and their learning preferences (Campbell, 2000; Gillis et al., 2001; Kramarae, 2001). If their social context is not taken into consideration in the designs of online courses, aspects such as overload of work, feelings of isolation and feelings of insecurity will interfere negatively in their learning experiences, as discussed next.

Having the course content presented in a variety of ways.

The participants interviewed appreciated when the course content was presented in a variety of ways. As one participant put it, "I like to see [a] mix of reading and discussion, and projects or papers. (...) I really appreciated when instructors were creative in how they were trying to present the material" (Participant 4: health educator in Alberta, interview, August 20, 2003). Another participant commented,

> I guess those would be my three main favorite ways, I think, I learn best: having some sort of discussion or talking, having [the] opportunity to do things visually and maybe presented in a logical way, and then having the opportunity to read as well. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

According to Carnwell (2000) and Smith (2001), learning preferences can suffer influences according to what type of learning strategies students are

exposed. For example, Participant 6, who considered visual information essential for her learning, commented that the online environment was not always supportive of her learning preferences. She said that most of the time she had to use other skills, such as analogies to cope with the lack of visual features in online courses:

> Yeah, there were times when I wanted to draw something out and I couldn't, so the better alternative that I used was an analogy, right? (...) I use a lot of analogies and I had one professor that really liked that and comment[ed] that I used a lot of analogies to explain myself and I think for me, I would like more teachers using analogies, so that I could picture in my mind... (Participant 6: health educator in Ontario, interview, August 5, 2003)

The use of analogies by Participant 6, a health educator in Ontario, illustrates the development of a new learning skill to adapt to the demands of learning in an environment which uses mostly verbal communication.

Furthermore, students may not present just one learning skill; they may present a combination of learning skills, applying these skills according to the learning environment to which they are exposed (Carnwell, 2000). In this context, learning environments in which the course content is presented in a variety of ways will be supportive of a variety of learning preferences and will also provide

students with opportunities to develop new learning skills to cope with the new learning demands.

The participants also mentioned that the assignments should also reflect this same variety, not focusing on just one aspect of learning. Participant 1, a recreation therapist, commented that in many of her courses most of the assignments focused on students' ability to read articles from the literature and synthesize them in a form of an essay or research paper:

> You know, the assignments, I know it's difficult to have a good mix of what students are doing, but some of them were quite, kind of boring and similar, I mean just you know, write three research papers for a course. Other courses that I took, for example, (...) had a good mix of assignments, one was a research paper, one was a kind of personal journal article thing she wanted us to write out, and the third one was a small group exercise (...) and we had to write a paper (...) (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003).

The participants agreed that learning in the online environment requires the ability to read large amount of texts, identify the main points and discuss them in a written format. In other words, it seems that the current online designs seem to privilege students who learn through reading and writing more than students who learn through visual information or students who prefer to talk

and hear about the theory being taught. Carnwell (2000) suggested that instructors and course designers should match course materials, teaching strategies and learning assessment methods to the variety of learning preferences presented in a classroom. These authors suggested the use of visual and audio media in combination with written materials and also a combination of practical and theoretical assignments (Vician, 2000; Wadell et al., 1999). Participant 1, a recreation therapist, seemed to agree that having the course content presented in a variety of ways could help her to keep motivated and develop new learning skills, as discussed by Smith, 2001).

> That would be helpful, I mean, I don't know what they are doing now with the visual stuff, but yes, somewhere where everybody can go and watch an instructor working through a problem because it's hard to figure out this kind of stuff alone or just have him or her, the instructor, talking about it in a posting. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

According to Carnwell (2000) and Smith (2001), it is a misconception to think that strategies for student assessment, particularly strategies for designing assignments, should not follow the same diversity recommended for the course material and course content. Presenting the course content in a variety of ways and then providing students with just one way to assess their learning is an

unfair and inexact way to measure what the student has learned. As a consequence, students and instructors will not be able to identify strengths and areas for improvement and development of new skills.

This study provided the participants with the opportunity to reflect about their needs and learning preferences. By identifying their learning preferences, students were able to understand why lack of face-to-face interaction, overload of work, and feelings of isolation and insecurity represented the challenges to their learning experience as discussed next. Furthermore, they were able to identify strategies to cope with these challenges which can help them to perform more successfully in online courses and assist instructors and course designers in the creation of more appropriate online course designs for female health professionals.

Challenges of Being a Distance Student

Feeling isolated.

It is not uncommon for distance students to report feeling isolated and in need of support. Participants reported feeling isolated when their questions were not answered and not enough direction regarding online discussion and course assignments was provided. Here is how one participant described her experience:

> (...) in the winter months when you are sending out e-mails and nobody is relying back, you feel like you are lost in cyberspace (...) you almost get like bombed down depressed because you are sitting there trying to learn, but you feel like nobody is supporting you. (...). So, you search as much as you can on the internet or do literature searches, but sometimes you just need to talk to a person and if you can't you feel like you are sending these messages out and they're gone and no one is getting them. I think that was challenging. (Participant 6: health educator in Ontario, interview, August 5, 2003)

Students seemed to relate these feelings of isolation to lack of support from the instructors and not from fellow classmates. These feelings of isolation can represent a real challenge for their learning experience if not addressed in the early stages by constant feedback. One student commented,

> Sometimes, in distance learning you are out there in cyberspace you go on and you keep doing your discussions and postings, but you don't necessarily get much feedback or you don't really know if you are on the right track and you can feel kind of lost, especially if there are too many students in a class. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

Another student noted, "the times when the instructor wouldn't show up until the last day or second last day of the posting week, that wasn't necessary[il]y terribly helpful because the class might have flown around (...)" (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

The participants considered learning a social experience, and they valued their interactions with other classmates and instructor, as discussed by Driver (2002) and Swan (2001). Once they are deprived of these interactions, feelings of isolation will appear, bringing insecurity and decreasing their motivation to learn. According to these authors, female students seem to benefit from interaction with both instructor and fellow classmates. It is worth noting that the participants in this study seemed to be satisfied with the level of interaction among the students in the class and seemed to be more concerned with the level of interaction with the instructor. The participants felt that achieving a closer relationship with their classmates online was easier than achieving the same closer relationship with instructors. One explanation for this finding is that women were the majority in most of the online courses attended by the participants. According to Davidson-Shivers et al. (2001) and McConnell (1997), female students seem to participate more often in online discussions and write supportive messages which show acknowledgement of the points made by other

students. The instructor, on the other hand, may not be always aware of female students' need for support and interaction.

Feelings of insecurity.

Feelings of insecurity were part of the experiences of the participants in the early stages of their programs and when they were presented with a new situation such as beginning their final projects or thesis. In such situations, the students feel that they may not have the necessary academic skills to perform the tasks proposed. This feeling of insecurity seems to be constructed as they anticipate the challenges they may encounter when performing the new tasks. One student recounted with a laugh, "I always had the secret fear that I wasn't very smart and someone was going to finally figure [that] out" (Participant 5: community nurse in British Columbia, interview, August 13, 2003). Another student related her feeling of insecurity to her language skills:

> Now, you know, I have the new challenge again, it is the thesis and my confidence is going down again because it's a new experience (...). I think it is just experiencing new things when you have a little bit of fear and then until you finally seem to leave that fear (...) Yeah, because of my writing, my first language growing up was French, so my English was never that strong. So, I was afraid, you know, even though in the WebCT [discussions] they say that they don't care too much about, (...) but you

still want to sound like you are fairly intelligent (...). (Participant 6: health educator in Ontario, interview, August 5, 2003)

Gillis et al. (2000) found that female learners seem to be susceptible to feelings of insecurity when learning in isolation or when feedback and reinforcement are not provided by the instructor. Burge and Lenskyj (1990) talk about feelings of insecurity in female learners regarding the use of the technology in the delivery of online courses. In this study, the feelings of isolation described by the participants seem to be more related to the findings of Gillis et al. than to those of Burge and Lenskyj. Although some participants seemed to consider assistance with the use of technology important, they related their feelings of isolation to lack of support and feedback especially when they are starting a new task. These findings emphasize the importance of having the instructor constantly supporting the students both individually and as a class.

Overload of work.

The social context of female health professionals learning online is crucial to understanding why overload of work was one of the most common complaints identified by the participants. Some participants analyzed work overload in online learning from a course design perspective while others analyzed it from the social perspective of female students having to fulfill roles other than being a student.

According to the participants, from a design perspective, it takes more time to learn and perform successfully at a distance than it would take if they were taking the same course on campus because of the lack of face-to-face interaction. Participant 7, a nutritionist and mother, felt that the reason for the higher workload in distance courses is the preparation for each week of discussion and the online discussions themselves:

> It was my experience that the time commitment was a lot greater in the distance delivered courses because, you know, you have to spend your own time reading the lecture notes if there are those, you have to spend your own time reading and preparing for the week ahead. Plus, you have to spend extra time conferencing with your classmates and instructors. (Participant 7: nutritionist in Alberta, interview, August, 21, 2003)

Participant 5, a health educator who speaks French as her first language, discussed overload of work in terms of the challenges of learning in a second language:

> But you still want to sound like, you know, you are fairly intelligent, so you write the best you can and then I guess, I think I probably spent longer than most students, I would probably guess, I spent longer than most students in formulating my answers because I wanted to have a critical thought behind it, but also because I wanted to make sure it came

> across in a well written manner. (Participant 6: health educator in Ontario, interview, August 5, 2003)

According to the female social context perspective, the workload of the online courses added to students' family and work responsibilities can be overwhelming especially for women with young children living in the household, such as Participants 1, 2 and 7, or for women taking care of aging parents, such as participant 4. One participant spoke about her experience of feeling somewhat overwhelmed balancing her various responsibilities:

> Well, at one point, I was working full time, taking two courses and I was pregnant with my first child. So, it was very challenging I think time wise and energy wise to meet the demands of two online courses at the same time under the pressure of working, getting ready for a baby, feeling very tired and one of the courses was quite heavy that term. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

Another participant recounted how her particular work situation impacted her studies:

> For example, (...), I had to work through two strikes during the course of my master's studies. This meant working endless hours and endless days on the inpatient hospital units, filling in for striking nurses one time, and

> striking support staff, the other. It was a challenge to keep up during these times. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

Participants suggested that instructors should review the amount of readings per unit and have realistic expectations regarding their participation in online discussions. Also, they felt that it is important for instructors to have some flexibility regarding due dates for assignments, as illustrated in the following interview excerpt:

> Although I don't think that all online learners continue to work, but I would think that because of the flexibility that online learning offers that a lot of people are working. So, I think that is a big thing that the instructor needs to think [about] when designing courses like this (...). (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

Another participant commented,

> I think that the readings have to be realistic, I mean there shouldn't be so many readings that the student feels totally overwhelmed. I think that [in] some of the earlier courses that I took there were tons of readings (...). Also, the requirement for online submission like discussions with other students, I think it has to be realistic as well, especially if there are a large number of students in a class. They should always consider how long it

takes to read through the responses of everybody else when they are deciding how many quality answers a person had to give every week. So, I would say that those are my considerations. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

The findings of this study relate to those of Soon et al. (2000) in which students also considered online courses time consuming due to the large amount of writing and reading required. According to the participants in both studies, a great extra amount of work is added when students cannot express their ideas verbally and hear other students' ideas. However, Soon et al. did not link overload of work to gender as did Gillis et al. (2000) and Kramarae (2000) when they talk about the challenges women face to accommodate education, professional life and family responsibilities, especially raising young children and taking care of aging parents.

The needs of female students can be accommodated in the online environment through: (a) constant negotiations with instructor and realistic expectations regarding readings, discussions and assignments; (b) well structured course designs which value students' experiences and situate learning in a real context; (c) support systems that involve classmates, instructor and academic institutions. (Campbell, 2000; Driver, 2002; Gillis et al., 2000; Kramarae, 2000).

Although the participants mentioned that the asynchronous online discussions provided them with the opportunity to explore the topics under study in depth, they also noted that the lack of face-to-face interaction was often a barrier to their learning experience and to their relationship with the instructor.

The participants also felt that courses which need visual demonstration of the theory are not suitable for online learning because online courses still rely mostly on reading and writing. Especially in these courses, if visual strategies are not applied, the students will have more difficulties with the course content than they would have in face-to-face instruction. Moreover, they will spend more time trying to understand the main concepts of the theory taught. One participant elaborated on this problem in relation to a statistics course she took online:

> One challenge that came from the school was in the statistics class. Some of the concepts, and of course, the math, were difficult for the professor to relay on the written format. Teleconferences helped somewhat here, but as one works through the formulas, that's when questions would arise. This was really the only class that was not as well suited for distance format than the others, but I think it still worked well. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

Another participant reported a similar experience:

> I guess however the subject matter translates to the classroom; for example, the statistics course we took, statistics I thought quite difficult to deliver online. In my undergrad course I took at the university in a real classroom and it was much easier for me because the instructor could work through problems in class and then after class we used to get together in small groups and work on stuff. (Participant 1: recreation therapist in British Columbia, interview, August, 9, 2003)

According to the participants, the lack of face-to-face interaction can also influence their relationship with the instructor. Participant 6, a health educator and visual learner, felt that misunderstandings can occur more often in online communication than in face-to-face communication: "And there was one time, (...), when this professor, I felt didn't understand my (...) point of view and maybe a face-to-face conversation might have clarified the issue where our e-mails back and forth didn't seem to work." (Participant 6: health educator in Ontario, interview, August 5, 2003)

Participant 6 also felt that building a mentoring relationship with the instructor is not as easy online as it is in face-to-face instruction. As the following interview excerpt indicates, the participants felt that if they were physically present on campus it would be easier to get more support from the instructors

and to establish a mentoring relationship that would be useful as they advance in their academic life:

> I think that the professors are less committed to you because they don't see your face, they don't see your disappointment, your happiness, your emotions. You know, if you are really excited about a program or excited to tackle your thesis, they can't see that emotion. (Participant 6: health educator in Ontario, interview, August 5, 2003)

It is interesting to note that the participants appeared to think that learning by distance can bring more challenges to their relationship with the instructors than to their relationship with their classmates. It seems that students are able to build relationships with classmates even without face-to-face interaction, but they believe they are not able to do the same with their instructors. One participant commented,

> Most of the challenges that I encountered, I boiled down to the fact that that I just never learned from a mentor (...) because, you know, I didn't have the opportunity to develop a relationship with anyone [any instructor] because I was a distance student. (Participant 5: community nurse in British Columbia, interview, August 13, 2003)

Valente and Luzi (2000) presented the lack of visual cues, the level of structure and the lack of spontaneity in online communication as barriers to

social interaction online in general. These authors did not talk how these barriers can impact distinctly the interaction among classmates and the interaction between students and instructors. One possible explanation for why the lack of face-to-face interaction may impact distinctly the interaction among classmates and the interaction between students and instructors is that distance students acknowledge the barriers of online communication and they assume that the instructor teaching online also teaches on campus where these communication barriers do not exist. As a result, it is more likely, according to Participant 3, that the instructor will prefer to build a mentoring relationship with the students they can meet face-to-face:

> Because if you are physically there, on the campus, then you are more of a constant reminder. You could camp out on [the instructors'] door [step]s or keeping going to their office until they talk to you. And so, you can make your presence felt more. The distance eases the fact that you can be placed on the side. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

The participants in this study talked about feelings of insecurity, isolation and overload of work as part of their experiences as distance students. They seemed to perceive all these challenges as consequences of not meeting face-to-face with instructors and classmates. I came to this conclusion when Participant

7, a nutritionist in Alberta, compared an on-campus course with an online course in terms of the workload and when Participant 5, a community nurse in British Columbia, stated that she was not able to build a mentoring relationship with an instructor because she was a distance student.

Another interesting aspect that I found in analyzing the data was that themes related to technology anxiety basically did not come out in the interviews. One explanation could be the fact that the participants interviewed were towards the end of their program or already had completed it. Therefore, they probably would not perceive technology as a challenge anymore even though I asked them to comment about their experiences in the beginning of their program. Another reason could be that students are entering online programs with more knowledge regarding the technology applied in the delivery of online courses.

In the next section, participants talk about their experiences as distance students in terms of how they overcame the challenges encountered and how they believe these challenges can be addressed by instructors and academic institutions. Participants' ability to develop strategies to overcome the challenges of learning online and even to present suggestions for instructors and faculties offering online programs showed that the participants interviewed perceived learning online as an empowering experience which encouraged them to identify

their needs as learners and to propose changes towards a more student-centered approach in online courses.

Coping with the Challenges of Online Learning

Building a mentoring relationship with your instructor.

As previously mentioned, the students interviewed felt in a disadvantaged position in comparison to on-campus students when interacting with instructors. They felt that it is fundamental to build a mentoring relationship with at least one instructor in order to be able to perform well as they advance in the program. One strategy that Participants 5 and 6 suggested is going occasionally to the university in order to meet face-to-face with instructors and potential thesis advisors. One student remarked, "(...) building on the opportunity to spend a term on campus to develop that kind of relationship with someone [instructor] would be really important" (Participant 5: community nurse in British Columbia, interview, August 13, 2003). Another participant explained how the desire for face-to-face interaction influenced her decision to return to the campus after a couple years studying online:

> So, I decided that it was important for me to go back to the university after two years (...). So that, you know, I can sort of stay in touch a little bit and I also went to the University of Alberta on purpose so I could meet with

> my thesis advisor because I wanted to meet him face-to-face. (Participant 6: health educator in Ontario, interview, August 5, 2003)

However, it is important to point out that depending on where students live and their personal lives, these face-to-face meetings can be challenging to arrange. One student recounted how personal factors interfered with her plans to meet an instructor she was considering as a potential thesis advisor:

> One opportunity that I missed and I think it was my fault was that last Summer, I found out that ([a certain instructor]) was running a qualitative course (...) and I had all set up to go (...) and that would have been my opportunity to get to know her and build a relationship towards having her as my thesis advisor (...) but because of becoming pregnant (...), I was unable to follow through with it. (Participant 5: community nurse in British Columbia, interview, August 13, 2003)

Another participant also commented on how studying at a distance particularly impacts distance students as they prepare to undertake their thesis projects:

> (...) because you are distance student and the instructors on campus don't really know who you are and don't have a lot of experiences with you so they are more hesitant to take you on as a thesis student and of course, there are more costs involved, because for me anyway, I had to travel to (...) monthly and there were telephone calls and all those types of things

that I had to pay for. Those things would be barriers. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

As in Kanuka's (2001) study, the participants considered having a mentor an important aspect of their learning experience and they also felt that to build this mentoring relationship at a distance can be challenging. However, the study of Nolan et al. (1999) showed that it is possible as long as both parties are willing to build this relationship. Participants in that study talked about their experiences in mentoring nursing students during their clinical internship and how the e-mail communication actually facilitated the provision of individual support. According to the literature, it is misconception to think that mentoring cannot occur at distance; however, it is important to consider that it requires knowledge of certain communication media and willingness from both students and instructors (Salaberry, 2000; Valente & Luzi, 2000). According to my own experience as a distance graduate student, I believe it is more realistic to expect to have a mentoring relationship with a thesis or a project supervisor than with instructors teaching the courses in the program. Thesis or project supervisors usually have the same research interests as their students and will have a longer relationship with them. I think course instructors can encourage students to move towards their learning goals, but they will not necessarily become mentors.

I believe more time than just four months of course instruction will be necessary to develop a mentoring relationship with an instructor.

Building local support.

Another strategy adopted by distance students to cope with feelings of isolation and issues regarding lack of face-to-face interaction is to build local support. This local support can usually come from professors in the local university, as indicated by Participant 6, and from fellow distance students who live in the same city, as discussed by Participants 1 and 4. Participant 6 recalled seeking out local support for one of her courses: "So, for instance, for that particular course, I actually talked to a research methodology professor at the local university here because, again, I just felt like I needed more support (...)" (Participant 6: health educator in Ontario, interview, August 5, 2003). Another participant recounted how she developed a mutually supportive relationship with a student peer:

> (...) during the second term there was another woman that I met (...) during the orientation that was also from Vancouver and she was quite supportive, we talked in the phone and we actually got together to meet and discus the assignments. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

Participant 4 explained how she started a local study support group of distance learners:

> I also started a study group in town with a bunch of [students] who are working on distance courses and we get together for breakfast once in a while. (...).You know, we are a sort of support group for each other. So, that was very important as a distance student to try to connect with people that I could contact locally who are also going to school. (Participant 4: health educator in Alberta, interview, August 20, 2003)

Participant 6 noted that it is not always possible to find local support because it depends on having instructors in the local university and students in the same city willing to provide this support:

> Yes, I did yes, but not everyone will be able to do it. You have [to have] either a university or someone who is specialized in your community. So, I was lucky because I was able to find that here. (...) I am very lucky because I worked with this particular professor in the past. (Participant 6: health educator in Ontario, interview, August 5, 2003)

The theme of local support appeared in the literature on online learning as collaboration among academic institutions. Nolan et al. (1999) discussed the experience of nursing students getting local support in order to graduate in the practical component of their programs. According to the participants and these

authors, local support can represent a great opportunity to have different academic institutions working collaboratively and to have students more satisfied with the level of support received. The study by Waddell et al. (1999) reinforced this notion, and the authors provided a successful example of how different academic institutions can cooperate and deliver high quality online courses for health professionals.

Having the instructors understanding their role.

The distance students interviewed related some of the challenges of studying online, such as lack of support and feelings of isolation, to the instructor's level of experience in teaching online:

> It came down to actually the instructor, and one piece of that is the instructor's comfortable level with teaching online. The ones who were more experienced tended to interact online better (...). I think that it may take another 10 years which is an eternity in computer time, but it could take another 10 years until we get to the point where we can feel almost guaranteed that when we get a professor in an online course that they are comfortable with that and know what they are doing." (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

Participant 3 felt that it is the role of the faculty offering the online course to ensure that the instructors understand the peculiarities of teaching online and

their role in the online environment: "And so, if you have a new instructor to look at things, make sure this person [will] have support from someone else in the faculty who is more experienced with dealing with online to help them out (...)" (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003).

In these comments, it appears that when students talk about the role of the instructor, they are actually talking about their expectations as students. In the following interview excerpt, Participant 5 explains that distance graduate students need an instructor who is also a mentor and she explains what being a mentor means: "So, I think she [one of her instructors] is a very good mentor because she sees the bigger picture about what my needs are as a learner and she is really challenging me and pushing me towards that" (Participant 5: community nurse in British Columbia, interview, August 13, 2003).

Having instructors understand their role in the online environment is a theme that also appeared in the work of Kanuka (2001) and Mills (2000). Although the role of instructors as described by these authors presents a lot of similarities to the perceived role of instructors stated in this study, the participants in this study seemed to wish to develop a relationship with their instructors based on mentorship and not only on learning facilitation. One explanation for this finding is that the majority of the participants interviewed

were graduate students with plans to continue in the academic field after the completion of their master's programs.

However, as I mentioned previously, it is not realistic to believe that a mentoring relationship will be established in four months of course instruction. I think instructors have different roles during different stages of the program. For example, instructors teaching students in the beginning of the program may need to play a nurturing role to deal with students' feelings of anxiety and insecurity. Instructors teaching students in the middle of the program should have a challenging role, pushing students to move further on their learning. Instructors teaching students in the end of the program should have a peer role, working collaboratively with students more as colleagues in the field than as instructors.

Using a variety of communication media.

The participants felt that the use of a variety of communication media can minimize the main challenges of online learning which according to them are the lack of face-to-face interaction, the overload of work, and the feelings of isolation. One student commented, "I think the conference calls were really important, for me, to hear people's voices and to have that opportunity to have a bit of a discussion" (Participant 4: health educator in Alberta, interview, August 20,

2003). Another participant also stressed the value of communication by telephone:

> (...) students should have access to various [media] of reaching the professors. For me, sometimes, an e-mail just not going to cut it when I need to explain something and when I need them to explain something. (...) But really e-mail isn't always the best way because if you can't be face-to-face, I think the next best solution is over the phone, right? So, that should be made available to the students. (Participant 6: health educator in Ontario, interview, August 5, 2003)

The same idea was expressed by Participant 1:

> I know they are doing different things now, I think virtual conferencing or whatever, but they [were]n't doing that one when I was there, but we did have telephone conferences which were helpful you could at least hear the voices of other students a couple of times a term and talk about the assignments. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

In these interview excerpts, the participants suggest the use of the teleconferences in combination with e-mail if students cannot meet face-to-face with the instructor. The use of teleconferencing provides students with the opportunity to communicate their thoughts synchronously and hear each other's

voices. They believe that if they cannot meet with their instructors and classmates face-to-face, talking on the phone will provide them with more personal contact than just sending e-mails; as one student put it, "The incorporation of teleconferences is still an important aspect to include (...)--voices still tell us more about our co-learners than does the written word. It made it a bit more personal" (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003).

The use of video conferencing was also suggested by the participants especially for courses which involve statistics. In these courses, the students really felt the need to have face-to-face interaction with the instructor and other classmates. It seems that when statistics is involved, students need to have their questions answered immediately; otherwise, they feel held back and frustrated. Especially in these types of courses, students feel that they had to spend twice as much time to perform their tasks with success than they would spend if they had some sort of visual interaction with the instructor. One student commented,

> I wouldn't have minded one or two sessions when we had the class together. I know that is possible now with some of the online technology. I think particularly for that research course, a couple of those would have been helpful. (Participant 4: health educator in Alberta, interview, August 20, 2003)

Another student expressed similar feelings:

> I think it's great, maybe some day they will be able to have more video conferences or something like that. We never had video conferences when I was going through, so I never got to see people in person and maybe it's something to consider incorporating more opportunities to do that type of discussions. Instead of doing everything from home, it would be nice to have blend of these two things. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

Although the students considered the blend of different types of communication media a strategy to cope with the lack of face-to-face interaction, feelings of isolation and overload of reading and writing, they also agreed that having too many video conferences of teleconferences can interfere with the flexibility of online learning. One student put it this way: "What I like about online learning is the flexibility and as soon as you got a bunch of classes and conferences calls and a lot of commitments when your time is tied up, it becomes less flexible" (Participant 4: health educator in Alberta, interview, August 20, 2003). The main reason cited by participants for becoming distance students was the flexibility offered by this type of instruction; therefore, if this flexibility is reduced by several scheduled appointments, online courses will become almost as inflexible

as on- campus face-to-face courses, as indicated by Participants 2 and 4. As Participant 2 put it,

> I think that many folks get into distance education because of a desire to learn while still working and raising a family. Given this assumption, the attempts at synchronous computer conferencing were not appreciated. If a course was to operate with only synchronous on-line discussion, it would force the student who values flexibility, into being at a certain place at a certain time, with a particular amount of prep work done ahead of it all: too inflexible. It was hard enough getting us all together for teleconferences, considering work schedules and time zone differences. (Participant 2: nurse in Saskatchewan, e-mail, August, 27, 2003)

The strategy of using a blend of different types of communication media, which combines video and audio, to cope with overload of work, lack of visual communication and feelings of isolation was also cited in the studies of Wadell, et al. (1999) and Zimmerman et al. (1999). In these studies, the participants expressed their concerns about finding the right balance between flexibility and the use of different types of communication media. Another aspect to take into consideration when deciding about using a variety of communication media is equity of access. For example, students living in areas with unreliable access to the internet, students who cannot afford the latest advanced technology, and

students with hearing disabilities or visual disabilities may not benefit from the use of a certain technological media (Ahola-Sidaway & McKimmon, 1999). Once more, the need becomes evident to apply the principles of adult education (Holton et al., 2001; Jones, 2001), the concept of learning preferences (Carnwell, 2000; Smith, 2001) and the understanding of the social context in which students are immersed (Kramarae, 2000) in order to choose the optimal mix of technological media to best meet pedagogical learning goals.

Despite the challenges encountered during their online program, the participants still felt that online learning provided them with unique experiences and opportunities that perhaps would not be as evident in face-to-face instruction. In the next section, the participants talk about the rewards of learning online and how they were transformed by it on academic, professional and personal levels.

Rewards of Being a Distance Student

Improving self-confidence.

From the beginning to the end of their distance programs, students seem to have their self-confidence increased both as students and as professionals, as stated by Participant 4: "Well, I feel very privileged to be in this particular program and it has been a really huge impact on my life in terms of skills, development of confidence, and contact with people" (Participant 4: health

educator in Alberta, interview, August 20, 2003). One participant reflected on how she became a more confident learner as she developed an awareness of her own needs and preferences as a learner: "I think as a learner I became better able to know what I liked in a course in terms of what were the main components that I needed in order to learn" (Participant 7: nutritionist in Alberta, interview, August 21, 2003).

The participants reported that as they made it through the courses, their confidence as students increased because they were able to learn the main jargon used in the field, and identify what was really important for them to know and what the expectations of the instructors regarding assignments and online discussion were. One participant reflected,

> I think that one thing that evolves is increasing in confidence. I think that part of that come[s] from just the experience of learning more and becoming more familiar with the subject matter you are studying and part of it also comes from being able to share. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

Another student commented on how her confidence increased as she became comfortable with assessing research as a result of her online studies:

> Yes, I am a pretty confident person in general, but it certain[ly] built my confidence to be able to speak with researchers, for example, to be able to

> speak the language of research. To interpret studies, to be able to figure out what was a good study design and what was not, so my confidence in that area has changed dramatically (...). (Participant 4: health educator in Alberta, interview, August 20, 2003)

Participant 6 expressed the view that her increase in confidence came especially from positive feedback received from the instructor, from the opportunities to share her perspectives with other classmates, and from the new knowledge she gained:

> I just kept getting more and more confident and, as I said, when I went to the university (...) for the second time, after taking some of the courses, some of the professors came to talk with me and one professor pointed me out to the new students telling how I was a strong student and that built my confidence too. (Participant 6: health educator in Ontario, interview, August 5, 2003)

One participant felt that her confidence increased in the workplace because she was able to apply some of the concepts learned in her online courses to solve problems at work. As a result, she felt more respected by her colleagues in the field:

> Professionally, I think as time went on too, I probably built up some confidence and I, you know, really felt that there was value in what I was

> learning and how I could apply it in my working setting. So, you know, professionally, I think it helped me as well. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

As their confidence increased, students seemed to enjoy their program more and cope better with the challenges presented, such as the difficulties in balancing studies, career and family life. One student commented,

> And I truly enjoyed it at this point. It became what I did in terms of being a student and being a worker, integrating both of them as time went on. It became easier and it just seemed natural after a while. It took me four years to finish my degree, so I was just better able to do both of those tasks, I think. (Participant 7: nutritionist in Alberta, interview, August 21, 2003)

Most of the confidence students gained seemed to be built in the beginning of the program during the first courses. These early courses seem to be crucial for the students' level of satisfaction with the program and for the students' performance in the following courses, according to Participant 5:

> So (...) the first course is very important. I think if you did poorly in your first course your confidence will not be that good. So, if your first course you do really good, well and your marks are strong then I think your

> confidence goes up. (Participant 6: health educator in Ontario, interview, August 5, 2003)

The literature on gender and online learning suggests that female learners are susceptible to have low levels of confidence. Belenky et al. (1997) discussed how learning approaches are still reflecting androcentric values which are not supportive of women's learning preferences. Campbell (2000) talked about the socially constructed anxiety about technology with which most female learners seem to struggle. These study findings show that if women feel supported by their instructors and classmates and are exposed to the appropriate pedagogy, they tend to overcome their feelings of insecurity and build strong confidence. Gillis et al. (2000) suggest that situated learning environments can increase motivation and self-efficacy in women because in this pedagogy their experiences are valued and applied during the process of solving a learning task. According to the comments of participants in this study, this confidence is founded on the belief that they can successfully perform the academic tasks proposed and on the opportunities to apply what they learned in their workplace and be respected in their field and communities.

Developing critical thinking through reflection.

Another reward of online learning, according to the participants, was the opportunity to engage in critical thinking. It was considered an advantage of the

online learning context because in asynchronous discussion students can take time to reflect about a question before writing down an answer, and this can improve the quality of the discussion. Participants commented that in face-to-face instruction, the same amount of time would not be spent in reflecting about an answer because the students could just respond verbally. As a result, participants felt that in-depth discussion of the topics under study is more likely to occur online than in a face-to-face setting. Participant 6 observed, "I like to be able to, I guess... to share my deep thoughts. (...). I liked the fact that I was able to really think about a question and then take my time in answering it (...)." (Participant 6: health educator in Ontario, interview, August 5, 2003). Another student stressed the benefits of extended discussions possible in the online context:

> I also think that distance learning can give a higher quality of learning in some courses and in some ways than a classroom would. I think I would have found [it] frustrating, having seen the depth of discussions in the online courses, to have [to have gone] to a three hour lecture once a week and then move on to the next topic. (Participant 4: health educator in Alberta, interview, August 20, 2003)

Participants 3 and 5 also reflected on how through the process of reading, reflecting and elaborating their answers in an online course, they were able to

learn and retain information effectively. Participant 3 commented, "I think that a lot of the way that I learn is through listening or reading and reflecting on the content and then coming forward with what I think or other questions" (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003). Participant 5 noted, "I focused on my reading (...) and the process of articulating it back in a form of a paper or an essay or whatever has taught me to retain information" (Participant 5: community nurse in British Columbia, interview, August, 13, 2003).

The participants tended to master their ability to engage in critical thinking in different situations as they moved forward in their programs. In other words, they seemed to be able to read through the course material and online discussions, process the information, integrate it with their own perspective, and articulate it in the form of a written answer. Participant 2 commented on what she saw as a "shift from knowledge acquisition to critical thinking" as she progressed through her program:

> I think that the progression of the classes, and the professors, class to class, really facilitated the shift from knowledge acquisition to critical thinking. It became more of an expectation, in later classes, and the way they [or the other students] directed the discussion made all this stuff really become a priority. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

The participants in this study seemed to relate reflection and the ability to engage in critical thinking to the characteristics of asynchronous forms of communication which allow them more time to formulate their answers. However, it is also important to underline that asynchronous communication per se does not facilitate critical thinking. The pedagogical approach also plays an essential role in facilitating critical thinking (Garrison, Anderson & Archer, 2001). Considering that the participants went through similar online programs, they were likely exposed to a situated-learning pedagogy.

Salaberry (2000) concluded that the type of communication media will not improve the quality of the learning task proposed if the appropriate pedagogy is not applied. Dolmans et al. (2001) suggested situated learning as the appropriate pedagogy to be used when the development of critical thinking is the main goal. According to these authors, critical thinking is achieved when case studies related to the context of the students are presented and the students work collaboratively to solve them. The development of critical thinking skills occurs because in this pedagogy, students are encouraged to activate experiences from similar situations they encountered in the workplace and elaborate knowledge based on both previous knowledge and new information (Wadell et al., 1999).

The participants also considered the asynchronous online discussions fairer than synchronous discussions in face-to-face classrooms because online everyone gets a chance to present their answers. Participant 1 reflected,

> "(...) although some people tend to write too much and dominate, in a classroom you sit and listen while online you can just go through their points very quickly. .
>
> You know, I like to take time to think before I speak; therefore, I think that online discussions quite suited me and the way I learn. I could read out and take time and write things out (...) it's different in a classroom, so everybody online in the class had a chance to pay their piece (...). (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

According to the participants, in face-to-face instruction, introverted students tend to be silent and extroverted students, who are more talkative, tend to control the discussion. Participant 3 related her experience as an introverted learner in a regular classroom:

> I am pretty far over on the extreme end of the introvert scale. So, If I am in a group of people like in a normal class situation where there are discussions going on there is a good chance that by the time I finishing

> thinking about what somebody else said in order to decide what I wanted to say about, they would have already move[d] on to something else. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

Another student recounted how she changed her response style to better fit with the "introspective" nature of the online discussions:

> Later on, I took more time to really think about the perspective expressed by the other students, and rather than 'lecture,' I began to ask more questions, probe a little....sort of like talking less and listening more. It was a relief, really. I removed the expectation off of myself to always take the lead in the discussions. I'm sure I learned more, once I figured this out, and learned more about my own perspective, being more introspective. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

The advantage of having equal participation of the students in a classroom is that all the different perspectives are presented and the discussion enriched. Valente and Luzi (2000) also considered asynchronous forms of communication as more equitable because less judgment based on physical appearance and social status occurs. In this study, the participants also emphasized the role of students' personality in their communication style. In other words, just as social

status and physical appearance can influence face-to-face communication, personality traits such as introversion or extroversion can. This finding emphasizes the need to consider both advantages and disadvantages of synchronous and asynchronous forms of communication when planning online courses (Salaberry, 2000; Vician, 2000).

Making a difference in the workplace.

Due to the fact that all the participants interviewed were also health professionals working in the field, they really appreciated the opportunity to apply what they learned to the workplace and to use examples from the workplace to illustrate their learning. In other words, they appreciated being able to integrate their professional and academic skills. As one student put it, "(...) the reward for me was that what I was learning was so practical and relevant to the work that I was doing that I could integrate them both and I really liked that" (Participant 7: nutritionist in Alberta, interview, August 21, 2003). Another student commented,

> Some stuff that I learned during the (...) program I was able to apply at work and some of the stuff that I learned at work I could use in my courses. So it's kind of cyclical and actually kind of helpful. (Participant 1: recreation therapist in British Columbia, interview, August 9, 2003)

By helping people at work with the theory learned and by sharing with fellow students examples from their workplace, participants felt helpful and valued as students and professionals. Participant 4 reflected on the rewards of applying her newfound knowledge in her workplace: "I think personally what I got most was the thrill to be able to share what I was learning with people that I work with to help people start to make sense of things" (Participant 4: health educator in Alberta, interview, August 20, 2003). Another participant commented on how she felt more and more compelled to apply her learning to her practice as she progressed through her courses:

> Later on, it became more about taking this theory and creating a health promotion practice that truly reflected the theory…it was more about, "How can I apply this in the real world?" "How can I be true to the principles I am learning?" It went from pure knowledge acquisition to critical thinking, to imagining real praxis. (Participant 2: nurse in Saskatchewan, e-mail, August 27, 2003)

As their comments indicate, the participants perceived online learning as responsible for improving their performance in the workplace. Once more, it is important to emphasize that the situated learning pedagogy played an important role in this finding. This pedagogical approach situates the theoretical concepts learned in the real world, encourages students to bring examples from their workplace to illustrate the concepts

learned and also uses the workplace a source of knowledge (Gillis et al., 2000; Jonassen, 1991).

Belonging to a community of learners.

The participants interviewed considered themselves members of a community of learners. As a community of learners, they developed strong feelings of collegiality and cooperation, as indicated in the following comments from Participant 3:

> (...) you know... that was really good and all of these connections you made with people who are literally spread all across the country, but who are your colleagues in the field and [whom] you wouldn't have otherwise (...) and that particular group of people and maybe it was because we were new to it and because we were so eager, maybe not, but the discussion was so good that basically carried itself and so for me it was very much a feeling of collegiality and really being able to learn from each other and that really, I felt, gave a lot of momentum to the course. (Participant 3: health promotion consultant in Ontario, interview, August 8, 2003)

It seems that participants' need to transform their learning into a social experience and the challenges faced by them during their program brought them

together as in a community. Participant 6 commented on the rewards of being part of a community of learners:

> I think that was a rewarding experience in that we on our own took the initiative and started a group where we help each other through the internet. That has been another rewarding experience, just being able to help your classmates through it. (Participant 6: health educator in Ontario, interview, August 5, 2003)

Some of the students interviewed felt that their interaction with other classmates at a distance was actually deeper and friendlier than it would have been in a face-to-face classroom because they got united by the objective of overcoming the challenges and having a successful learning experience. One student commented,

> I learned about what other people would share too about their experiences, which was nice. By the end of the class, if you kept the class fairly small you are able to kind of understand everybody's personality, just through written work. So, in one class you learn about things from people and you get to know people. (Participant 6: health educator in Ontario, interview, August 5, 2003)

The participants felt that in a face-to-face instructional setting, less time is spent in discussions and more time is spent listening to lectures given by the

instructor. For this reason, the students have less opportunity to share their deep thoughts. Some personality characteristics such as introversion and extroversion may also play a role in the interaction among students in a face-to-face classroom. One participant reflected,

> (...) you may not get to know them as well on their deeper level if they aren't the ones that speak out in [a regular] class. So, if they are not the ones that speak out in class then you wouldn't get to know their deeper thoughts (...). (Participant 3: health promotion consultant in Ontario, interview, August 5, 2003)

The participants agreed that it was worthwhile to have experienced online learning. Even the participants who felt frustrated with the challenges faced during the program experienced some sort of personal, academic and professional growth as a result of being an online learner. Participant 3 focused on the connections she made with her classmates online:

> I had to sort keep working on going back to that balance and say ok, that [feeling frustrated] is just one piece and there was all this other stuff that happens too, you know... that was really good and all of these connections you made with people who are literally spread all across the country, but who are your colleagues in the field and you wouldn't have otherwise, you know... Yeah, there are good days and bad days.

(Participant 3: health promotion consultant in Ontario, interview, August 8, 2003) 170

Walter (1999) defined community in three different ways: (a) as functional spatial units meeting basic needs for sustenance, (b) as units of patterned social interaction, and (c) as symbolic units of collective identity. According to the findings of this study, online learners developed a community based on their common objective of achieving high quality learning and based on their need for support. Although they were not geographically connected, they were connected by the identity of being female health professionals trying to deal with the challenges of online learning and trying to accommodate education, career and personal life (Gillis, 2000; Kramarae, 2000).

The findings of Driver (2002) and Graham and Scarborough (2001) also reinforce the fact that belonging to community of learners is a crucial aspect in increasing success and satisfaction for students learning online. However, it is not realistic to expect that a community of learners will be formed if the appropriate pedagogy is not applied. Dolmans et al. (2001) and Jonassen (1991) suggested that in learning environments where a situated learning pedagogy is applied, the chances of having learners working collaboratively as a community increase because this pedagogy emphasizes group work as one of the main strategies to complete the learning tasks proposed.

After identifying and reflecting on these essential themes, I was able to understand the experiences of female health professionals learning online. In this study, female health professionals chose online learning because they appreciated being in control of their learning experience and being able to accommodate education in their busy lives, which combine different responsibilities such as having a career and raising a family. Both challenges and rewards were part of their experiences. Most of the challenges seemed to be a consequence of the lack of face-to-face interaction in the online environment. In terms of rewards, participants described the increase in their confidence as students and professionals as the best reward of learning online. They described learning environments that foster collaboration and the direct application of the theory into practice as the most appropriate for their learning preferences. But most of all, they felt that a successful learning experience depends on the level and quality of the support provided by instructors, fellow students and academic institutions.

By understanding the experiences of female health professionals learning online, I was also able to identify characteristics of online environments which can support their learning and transform it into a rewarding experience. However, I believe there are still further areas for investigation especially

regarding the relationship between instructors and students and the influence of the lack of face-to-face interaction on this relationship.

After analyzing the data, I reflected back on what was left unsaid. In other words, I asked myself if I really had identified and discussed all the themes that the participants communicated during the interviews. During this reflection, I reread the interview transcriptions and the feedback provided by the participants. Then, I realized that my interest in investigating online learning from a gender perspective made me overlook other factors, such as culture, which can also play a role in the learning preferences and needs of students learning online. When I read the interview transcriptions once more, I noticed that this aspect appeared clearly in one interview excerpt. In this excerpt, a participant identified herself as a predominantly visual learner due to her cultural background:

> (...) my first language is French, so my English was never that strong. (...) I spent longer than most students when formulating my answers (...) because I wanted to make sure it came across in a well written manner. (...) There were times when I wanted to draw something and I couldn't, so the best alternative was an analogy. (...) I am the type [of learner] who needs to think visually and have a picture (Participant 6: health educator in Ontario, interview, August 5, 2003).

Teikmanis and Armstrong (2001) discussed the challenges of teaching nursing students from different cultural backgrounds. According to these authors, different cultural backgrounds can influence the students' expectation for support and the students' learning preferences. They suggested that thinking and writing in an online environment that does not situate learning within a real context can be very challenging for students whose first language is not English. Furthermore, Ahola-Sidaway and McKimmon (1999) pointed out the need for equitable online learning environments respecting the Canadian multicultural makeup and also the French-and-English-speaking communities. These authors proposed the use of a combination of communication media to support students' developing competence in the use of the technology and language skills. They also underlined the fact that some students learning online may not have the financial resources to afford the most sophisticated technology. Therefore, the use of diverse communication media needs to be realistic about the social and economic context of the students (Kirkup, 1995).

Although the objective of this study was to investigate the experiences of female health professionals learning online, considering the cultural dimension helped me to understand my own experience as a female health professional from a different cultural background. It also provided me with the opportunity to reflect about whether the characteristics of the online environment explored in

this study as supportive of female learners would also be supportive of culturally diverse students. As a female student from a different cultural background, the most important barrier that I had to overcome was the language barrier. Although I had a good knowledge of English when I started my program, expressing my thoughts in English was difficult sometimes. I believe I spent more time writing my essays and elaborating my postings for the online discussions than students whose first language is English. When writing postings for the online discussions, I had to edit them first in the Microsoft Word and then copy and paste them to the bulletin board. Also, I read the message that I wanted to post several times in order to ensure that my thoughts were expressed in a clear and objective manner.

Writing assignments was also a struggle; I had to start working on them before other students because I had to spend more time editing them. The time spent dealing with these language issues made the workload of learning online even heavier. Moreover, I was always stressed worrying that I could not finish my assignments on time or get a good mark because of communication issues. Although I received support and encouragement from some instructors and classmates, feelings of low self-efficacy and insecurity were a constant part of my life as a student. These feelings happened mostly because I did not see an

effective way to solve these language issues and to be able to concentrate my energy on other aspects of my learning.

Further in my program, I teamed up with a fellow classmate for discussion and feedback regarding the assignments. As a result, I was able to develop some effective writing skills, and I felt more confident about my written work. Other than that, I never received formal support with writing and editing my essays in my program. As a student who does not speak English as a first language, I would have appreciated having an effective writing skills course offered online in parallel with the first course that I took in the program because it would have provided me with the opportunity to identify areas for improvement and work towards achieving my writing goals at the graduate level. Also, I would have been able to connect and exchange experiences with students going through the same problems and not feel isolated. Another strategy to cope with language issues would be having affordable editing services available for distance students to which they could submit their essays via e-mail attachments for revision and feedback.

Language was the main barrier that I faced as an online learner from another cultural background. Fortunately, I did not experience problems accessing the technology used in the delivery of online courses due to lack of financial resources or lack of technology training as described by Ahola-Sidaway

and McKimmon (1999), but I can see this factor affecting several students from minority groups including female students. Boshier and Onn (2000) and Bryson and de Castel (1993) discussed the fact that technology tends to reflect the values of a dominant, privileged class, which can prevent women and other minority groups from having access to the benefits of online learning. Furthermore, according to Belenky et al. (1997), the creation of environments that emphasize contextual learning and collaboration may relate to the needs of women and also to the needs of other marginalized groups in society.

In the context of online learning, we can reflect about whether the same learning environments that are supportive of the needs of female students would be supportive of the needs of cultural diverse students. From my personal experience, I think aspects such as collaborative and situated learning helped me to cope with difficulties of learning in a second language. However, it is also important to take into consideration factors directly related to teaching students from different cultural backgrounds, such as language and communication issues.

In this section, the experiences of female learning online were explored in depth. By exploring these experiences, it was possible to identify some pedagogical characteristics in the online environment which are congruent with the needs of female health professionals learning online. Moreover, the results of

this study can be used to prompt further questioning about the role played by gender and culture in the online environment and about issues regarding the lack of face-to-face interaction.

In the next chapters implications for practice are discussed in the context of these findings and the literature reviewed, answering the second research question: What can we learn from the experiences of female health professionals learning online in order to design online courses that are more appropriate to the needs and learning preferences of this specific group?

In the previous chapter the first research question of this study: "How do female health professionals experience online learning?" was answered. For the female health professionals participating in this study, online learning represents an opportunity to update their knowledge and achieve professional growth without having to be away from their family or putting their career on hold. They prefer organized environments where the learning goals are clearly stated, their experiences are valued as knowledge and they can learn through interactions with other classmates and instructors.

The participants believe that students should have the course content presented in a variety of ways and this same diversity should be reflected in the assignment design They agree that the workload of some online courses needs to be reviewed and adapted to the social reality of female students, which may involve responsibilities other than being a student, such as raising a family and working full-time.

In this context, the implications of the study findings for both practice and research in the field of online learning are discussed, answering this study's second research question: What can we learn from these experiences in order to design online courses that are more appropriate to the needs and learning preferences of this specific group? The implications discussed here were based

on the experiences of the participants interviewed and on my personal experience as both distance student and researcher. However, it is important to acknowledge that just as female students may have difficulties in implementing some of the strategies suggested here due to of an overload of work and lack of time, instructors may also experience the same difficulties due to academic responsibilities.

As mentioned above, instructors teaching online may also experience an overload of work due to the demands of the online environment such as interacting online with a large number of students, preparing online courses, learning new pedagogies and dealing with the technology required in such courses. Moreover, they are usually involved in other academic activities which include research and administrative tasks. For all these reasons in combination with economic constraints in academic institutions, the strategies presented here are in fact suggestions and should involve collaboration among course designers, instructors, researchers, students and academic institutions.

Implications for Course Designers and Instructors

Keeping courses flexible.

According to the study findings, the most important reason for health professionals to pursue online learning is its flexibility (Chapman, 2000; Dixon et al., 2001; Zimmerman et al., 1999). However, it is also important to take into

consideration that distance students usually work and have family responsibilities besides being students (Gillis et al., 2000; Kramarae, 2001). Therefore, it is suggested that instructors and course designers keep courses flexible, not overloading students with many scheduled appointments such as teleconferences, video conferences and online chats. The need to use these communication media and the schedule of such sessions should be negotiated between students and instructors in the beginning of the course. Additionally, the instructors should plan the deadlines for assignments but provide students with some extra time in case they need to use it.

Providing students with opportunities to make decisions.

Since distance students seem to appreciate being in control of their learning experience, it is recommended that instructors provide students with opportunities to make decisions regarding their learning (Holton et al., 2001; Merriam, 2001). For example, instructors should present students with different options of assignments and let the students decide which one to choose. Also, students should be able to decide about the percent of their marks they would like to assign for each task proposed according to the importance of the task and the time that they will spend doing it.

Identifying the students' background and learning preferences.

Although there are some common characteristics among health professionals learning online, online classes are usually composed of students with different learning preferences (Carnwell, 2000). Instructors should initially spend some time getting to know their students, their life contexts, and learning preferences. For example, in the beginning of each course, instructors should ask the students to introduce themselves, comment about their professional background, and also present some comments on their expectations regarding the course and their learning preferences. By identifying the expectations of the students regarding the course content and regarding their role as instructors, this strategy can help instructors manage the course effectively.

Offering the right amount of support.

According to the findings of this study, students can have their confidence increased and perform better in online courses if the right amount of support is provided (Jones, 2001; Nolan et al., 1999). Students seem to appreciate it when their individual questions are immediately answered and when the instructor is often present in the online discussions, mediating them and providing a summary at the end of the main points discussed during the week. Moreover, students also appreciate being able to reach instructors by telephone during

office hours. In most cases, telephone calls and e-mails can be effective ways to reach students and provide individual support for students.

Providing constant feedback.

Online learners seem to benefit from constant feedback (Cravener, 1999; Gillis et al., 2000). In this study, the participants appreciated having their questions regarding assignments promptly answered. In addition, feedback should be provided to the students every time a mark is assigned, and students should receive some feedback regarding their participation in online discussions. This feedback will provide students with an opportunity to review their work as students and to make the necessary improvements.

Presenting information in a variety of ways.

It is very likely that students in the same classroom will present a variety of learning preferences. Consequently, it is useful for students to have the course content presented in a variety of ways; this approach also encourages students to develop different learning strategies (Carnwell, 2000; Smith, 2001). This study's findings indicated that online courses tend to rely too much on reading and writing and to lack opportunities for students to express their thoughts visually and verbally. Especially in online discussions, students seem to miss visual aspects when communicating their ideas. The use of software and communication media that allow students and instructors to draw figures and

diagrams would help to cope with this limitation. Also, the readings assigned per unit should contain a well balanced mix of text and visual information.

Students should also have their learning measured in a variety of ways. The assignments should incorporate skills other than just synthesizing articles from the literature in a form of a research paper. Some strategies are assigning practical assignments which will encourage students to apply the theoretical concepts in a real situation. For example, an assignment could invite students to perform an interview and discuss the advantages and barriers of this type of data collection instrument based on their own experience, instead of just reading about it in the literature.

Presenting the course content in a structured way.

Female students learning online seem to benefit from well organized environments in which they are provided with some structure for learning (Gillis et al., 2000; Smith, 2001). The types of structure that the participants discussed in this study can be classified in the following three categories:

1. Cognitive: with the use of advance organizers that display course information in a logical and sequential manner, emphasizing the learning goals and the main ideas of each unit. Due to the fact that in online learning, students usually learn by reading large amount of texts, they find it helpful when instructors present the main points for

each unit so they can focus on these essential parts when reading or elaborating their answers. Students also appreciate it when instructors present a summary synthesizing the main ideas explored in the online discussions. The creation of a course guideline at the beginning of a course containing the important dates, description of assignments and learning goals stated by unit of course content may also help students to feel focused and connected to the course.

2. Contextual: with the use of examples from practice to illustrate the concepts learned, placing theoretical concepts within a real context. Instructors should provide students with opportunities to bring examples from their practice to illustrate the new concepts learned, and they should also be willing to share their examples and experiences as well when necessary.
3. Temporal: with the provision of tasks to be performed and realistic deadlines, giving the students the opportunity to accommodate their studies into their busy lives. Instructors should provide students with deadlines for assignments and online discussions. While distance students appreciate flexibility, they also agree that having deadlines to meet helps them to organize their study and the events of their lives. However, these deadlines need to be flexible in certain situations.

Promoting collaborative learning.

Considering that students believe that belonging to a community of learners plays an essential role in their learning (Driver, 2002; Swan, 2001), instructors should find ways to promote collaborative learning; the use of a situated learning pedagogy will provide students with the opportunity to work in groups on particular assignments. According to this pedagogy, the students are invited to bring their experiences to the situated-learning pedagogy, critical thinking is achieved when students work collaboratively in group to solve case-studies (Dolmans et al., 2001; Garrison et al., 2001; Jonassen, 1998). In order to identify solutions to the case studies proposed, students need to reflect about how they solved similar cases in their practice and combine this information with the new concepts learned. Other strategies to achieve critical thinking involve asking students to keep a journal and inviting them to perform self-evaluation and evaluation of the course.

Addressing feelings of insecurity at an early stage.

Feelings of insecurity regarding the technology used in the delivery of online courses and the students' academic performance should be addressed in the early stages of a course; otherwise it can negatively impact the students' learning (Vande Vusse & Hanson, 2000). Feelings of insecurity regarding the technology used in the delivery of online courses need to be addressed by both

instructors and academic institutions (Mills, 2000; Zimmerman et al., 1999). For example, academic institutions should make available for students a 24-hour help desk which can be accessed by both a toll-free number and by e-mail. Also, online information about how to access the library and other online services should be available on the program website.

According to participants in this study, instructors can also help students to deal with feelings of insecurity by providing constant feedback regarding the students' performance, promptly answering students' questions and concerns and offering individual support via e-mail or telephone.

Reviewing the workload.

Most of the participants in this study considered the workload in online courses to be twice as heavy as the workload of on-campus courses. The heavy workload of online courses added to family and work responsibilities can cause stress and frustration in female health professionals learning online (Kramarae, 2001). This finding indicates that instructors should review the amount of reading and writing assigned per week and use strategies to try to reduce the amount of work. These strategies could include dividing the class into two groups for the online discussions and assigning one or two readings per student in a group and having the students summarize the readings assigned as a group. Students and instructors should discuss the need for teleconferences and video

conferences in order to choose the right amount of these sessions per course. The schedule for assignments should be presented to students at the beginning of the course and the instructors should plan these dates in order to allow students some extra time if they need to use it.

Implications for Students

Having good organizational skills.

In the beginning of each course, distance students should review the course guidelines and they should incorporate the dates of their assignments and teleconferences into their schedules. In case they have doubts regarding some aspect in the course guideline, they should ask the instructor immediately for clarification (Vande Vusse & Hanson, 2000). Additionally, they should try to work in advance on assignments, to create a study schedule and to budget the time required for reading, discussions and assignments. Students should also ensure they know who to reach in case technological problems occur (Mills, 2000). It can also be helpful to students to team up with classmates to discuss individual assignments.

Building local support.

Whenever possible, students should try to develop sources of local support, which could include a faculty member in a local university or another distance student living in the same city. The local support can help students to

keep their motivation and confidence by giving them an opportunity to receive individual support face-to-face and to share their experiences with fellow students living in the same city. In cases where local support is not available, students should be able to get the support that they need from classmates, instructors, and the academic institution offering the program (Mills, 2000; Zimmerman et al., 1999).

Working as a group.

Since online discussions are considered by online students a very important part of their learning experience (Driver, 2002), they should bring to this discussion their perspective, providing examples from their practice to illustrate the concepts learned, providing constructive feedback to their classmates and respecting their classmates' points of view. Offering support to their classmates and also asking for support when needed is an effective strategy to cope with feelings of isolation and to increase motivation according to participants in this study.

Getting help whenever you need it.

Regardless of the nature of the problems, students should get help as soon as they need it. Communicating often with instructors and support staff is the key for solving academic and learning problems that students may have (Mills, 2000). It is helpful for distance students to have a list of e-mail addresses and

phone numbers of the people they need to reach in case of problems. Being familiar with the university website can also be helpful for finding useful information. The exchange of information between students via bulletin board or e-mail can also help to keep students on the right track. In terms of the course content, in the beginning of the course or of each learning unit, students should try to identify their doubts and concerns as early as possible by reviewing the learning goals stated in the course guidelines and the expectations regarding the assignments.

Implications for Academic Institutions

Providing training for instructors.

Academic institutions offering online courses should provide instructors with periodical training in both technology and pedagogy used in online learning (Mills, 2000; Vande Vusse & Hanson, 2000). They should provide instructors teaching online with opportunities to exchange their experiences during meetings and workshops. Also, they should make it possible for new instructors teaching online to go through training before they actually start teaching online and to have experienced instructors helping them to become familiar with the peculiarities of teaching online.

Providing training for students.

New distance students should be assessed in their technological skills and, according to their needs, trained in the technology used in the delivery of online courses prior to the beginning of their program (Mills, 2000; Vande Vusse & Hanson, 2000). Otherwise, class time will be spent on solving students' problems with technology. This training should explain how to use the software for the online discussions, how to access the library and how to perform online searches. Academic institutions should also offer opportunities for new distance students to connect via e-mail with experienced students in a type of a buddy system.

Making available a variety of communication media.

The use of a blend of communication media can help to reduce students' workload by reducing the time spent reading and writing, giving instructors more options to present the course content and providing students with different ways to reach instructors for support (Vande Vusse & Hanson, 2000; Vician, 2000). Although teleconferences, video conferences and online chats can sometimes reduce the flexibility of online courses, they should be available for students and instructors according to their needs. Once these communication media are made available for students and instructors, training opportunities should also be made available for instructors and students in the use of these media.

Academic institutions should be responsible for creating mechanisms to support both students and instructors (Mills, 1999; Zimmerman et al., 1999). Some of the support mechanisms suggested in this study are the following:

1. The creation of a toll free number support line available 24 hours a day to support students and instructors with the technology required in the delivery of distance courses.
2. The creation of a website containing relevant academic information and contact numbers and e-mails
3. Online library access and a librarian especially assigned to help distance students.
4. Effective delivery services for items bought at the bookstore and for items ordered from the library.

As a researcher, being a distance student and bringing my own experiences to this study provided me with a new perspective about how to research this specific group. In the methods and procedures chapter, I commented about the limitations that I anticipated encountering with the instruments of data collection. Considering that the data collection instruments applied in this study were: (a) open-ended telephone interviews, (b) students' journals, and (c) e-mail messages, I expected to encounter limitations related to the lack of face-to-face interaction, such as lack of visual information and lack of spontaneity (Salaberry, 2000; Valente & Luzi, 2000). I also anticipated issues related to the need for participants to express their thoughts in writing and to bring new information to the study since most of the communication would occur via e-mail and I used a questionnaire as an interview guide (Cresswell, 2003).

After conducting the study data collection and data analysis, I found that, in fact, none of the limitations that I had anticipated had a negative impact on the study. Although all the interviews occurred over the telephone with no face-to-face interaction, the participants were able to express their thoughts freely and spontaneously. Most participants used their own experiences as distance students or the experiences of other distance students they knew to illustrate

their thoughts. There were moments of humor, regret, disappointment and reflection in their speech that could be identified by their voice inflexion, speech expression, laughs and pauses.

Preparing a questionnaire as a guideline for the interviews did not prevent the participants from adding new information and from bringing their true perspective to the study because I advised them that I had created that questionnaire only as a guide. Also, I gave them the option to follow the questionnaire or not. During the interviews, I asked the participants the first and the second questions of the questionnaire and then the interview developed as a conversation. Communicating by e-mail with the participants was also not a barrier to the study because, as I mentioned in the methods and procedures chapter, distance students are used to communicating their thoughts in writing. In fact, I found e-mail communication a valuable instrument to use in this study, especially to explore ideas further, to gather feedback from the participants and to facilitate their participation in the study.

In fact, the limitations pointed out in the methods and discussion chapter of this study did not impact negatively the data collection in this study. However, after reflecting about the findings of this study, I was able to identify several factors that can pose limitations to studies involving online learners if not correctly addressed by the researcher, as I explain below.

The first aspect to take into consideration when conducting research in the field of online learning is flexibility. Considering that distance students have busy schedules and responsibilities other than being a student, the researcher should offer them flexibility to participate in the study. When I invited students to participate in this study, I stated clearly that I would conduct telephone interviews following the schedule that was most convenient for them. Offering the participants schedule flexibility and coping with different time zones were challenges for me as a researcher because I had to conduct interviews during the weekends, early in the mornings or late in the evenings.

The second aspect to take into consideration in researching online learning is giving distance students some control about how they would like to contribute to the study. In my study, I provided students with the option to participate in individual telephone interviews or to respond in writing to my questions and to return to me as an e-mail attachment. Another option for them to participate was by sharing the journals and diaries that they wrote as distance students. By offering these options, I respected their schedules and the way they preferred to communicate their thoughts.

The third important aspect to take into consideration in researching online learning is inviting participants to participate in the analysis of the data collected. In this study, I invited students to review their interview transcripts and to

provide their feedback of the final draft of the study findings. By using this strategy, I was able to validate the study results and respect the participants' perspectives.

In terms of communication between researcher and participants, e-mail seemed to work well since distance students are familiar with this type of communication media to convey information. However, most of the participants preferred to use fax when returning the consent forms than mailing them back to me. This indeed was useful to speed up the process of scheduling and conducting interviews since the consent forms signed were in my hands more quickly than they would have been had participants mailed them to me.

Although the suggestions presented above are important to take into consideration when designing research methods for this specific group, I think the success of my study was also related to the trust that I was able to build with the participants who were also my fellow students during my program and the fact that I created mechanisms to value and respect their points of view.

Besides helping us to understand how female health professionals prefer to learn, the findings of this study shed light on several specific issues such as the relationship between instructors and students and the role played by culture in online learning environments. In this context, some relevant questions for future reflection would be:

1. Why does the lack of face-to-face interaction impair the relationship between instructors and students?
2. Does the lack of face-to-face interaction influence the relationship among classmates and between students and instructor in the same way? What are the main differences?
3. If a variety of communication media were made available for instructors and students, would students be able to build the type of relationship with instructor that they wish?
4. Why is it so important for female distance students to develop a mentoring relationship with their instructor?
5. Do the same characteristics that facilitate learning for women support the learning needs of culturally diverse students?

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Open-Ended Questionnaire

1. Why did you decide to become a distance student?

2. How would you describe yourself as a learner (or your learning preferences)?

3. Give me an example of an online course that you took during your program that you think was supportive of your learning preference? Explain why:

4. Tell me about the most rewarding situation you experienced as a distance student?

5. Tell me about the most challenging situation you experienced as a distance student?

6. Try to remember your experiences at the beginning, middle and end of your distance program.

What changes did you experience as a student?

Why do you think that these changes took place?

7. Based on your experiences as distance student, what aspects do you think are important to take into consideration while designing online courses?

8. Would you recommend distance education to a friend? Why?

Applying a holistic and a selective approach

Part of the interview transcription:

"Yes, exactly I think one of the nicest things about distance learning is that more than in a traditional classroom, it really respects me as an adult learner and as an adult learner, I prefer to say that as supposed to a mature student, I hate the sound of it. [Laughs…]. As an adult, I have a lot of other commitments in my life and it respects my decision about how I am going to arrange to fit the different components of my life together. Rather than saying here is the way it is take or leave and you know, maybe for men too, but for women who are constantly having to fit things into our lives because we have so many responsibilities so we find that we have to, you know, scratch a little bit of time in here or squeeze that in there and the distance format when we are doing the online postings is much more respectful of that." (Interview, august 8th, 2003)

First, by applying the holistic approach I classified this whole chuck of data under the category "reasons for becoming a distance student." Second, by applying the holistic approach, I was able to identify in the same chuck of data, several themes interrelated to the main category "reasons for becoming a distance student," as shown in chart 1:

Chart 1. Applying the selective approach to the data gathered under the major category "reasons for becoming a distance student"

Social context of female adult learner	Being in control of their learning	Schedule and geographical flexibility	Overload of work for female students
"As an adult, I have a lot of other commitments in my life"	"(…) it respects my decision about how I am going to arrange to fit the different components of my life together. Rather than saying here is the way it is take or leave"	"(…) and the distance format when we are doing the online postings is much more respectful of that."	"(…) for women who are constantly having to fit things into our lives because we have so many responsibilities so we find that we have to, you know, scratch a little bit of time in here …"

Curriculum Vitae

Marise Pinheiro

My Profile

I have a B.Sc. in Nutrition and as a nutritionist, I worked in both clinical and community settings. In September 1999, I started the Master of Science distance program offered by the Centre for Health Promotion Studies at the University of Alberta. During my time as a student in this program, I became interested in online learning and in how it could be made more appropriate to the needs of the learners.

In the spring of 2002, I worked as a practicum student under the supervision of Dr. Sandra Hirst (Faculty of Nursing – University of Calgary) involved in the creation of a recommendation report for online courses, including a cultural course for health professionals, which is currently being offered by the Faculty of Nursing. In the same year, I started to work under the supervision of Dr. Katy Campbell (Co-Director, Academic Technologies for Learning, Faculty of Extension, University of Alberta) on my thesis, entitled "Female Health Professionals as Online Learners: Our Experiences and Our Stories" which I successfully defended in January 2004. The data collection instruments applied in my study included open-ended interviews, e-mail

messages and participants' journals. I believe that both my knowledge of online learning and my experience as a distance student have provided me with a comprehensive understanding of online learning including gender issues, pedagogies and the learning preferences of online learners.

Education

Masters of Science (Fall 1999 – Spring 2004).

Centre for Health Promotion Studies, University of Alberta

Edmonton - Canada

Courses completed.

Foundations of Health Promotion; Introduction to Health Promotion Research; Social Cognitive Approaches to Health Promotion; Program Planning and Evaluation; Community Development Approaches; Community Health: Practice and Research Perspectives; Group Processes (University of Calgary); Health Promotion Practicum (Project: Implications and Strategies for Learning and Teaching Online).

Thesis Title.

Female Health Professionals as Online Learners:

Our Experiences and Our Stories

Bachelor of Science in Nutrition (1992 – 1996).

Rio de Janeiro State University, Rio de Janeiro, Brazil

Research Activities and Publications

I am currently writing an article about online learning based on my Master's thesis, which was defended on January 29th, 2004.

Projects presented in the poster session of the 9th Conference of the International Association of Health Policy, held in Montréal from June 13th to June 16th, 1996:

- *Nutrition for Seniors: A Program of the Centre for Interdisciplinary Studies on Elderly* (Rio de Janeiro State University – Brazil)
- *Anthropometric Assessment of the Seniors Participating in the Activities offered by the Centre for Interdisciplinary Studies on Elderly* (Rio de Janeiro State University – Brazil)
- *Nutritional Assessment of the Seniors Participating in the Activities offered by the Centre for Interdisciplinary Studies on Elderly* (Rio de Janeiro State University – Brazil)

Professional Activities

I am currently working as a part-time research assistant on a project entitled "Gender Issues and Learning Styles: Implications for Designing E-Learning for Health Professionals." (University of Alberta and Health Canada)

- Assisting with literature review on learning styles and gender issues

- Assisting with data collection and data analysis

Edgemont Club (Calgary Canada, 2000).

- Provided nutritional education on healthy eating
- Provided nutritional counseling regarding specific health conditions

Kidney Kids' Camp (Alberta Children's Hospital, Calgary, 1999).

- Provided nutritional education for children with renal conditions Planned menus according to the dietetic needs of children with renal conditions
- Monitored the meals served in the camp

Pedro Ernesto University Hospital (Rio de Janeiro, Brazil, 1996).

- Worked on medical research regarding the nutritional and anthropometric status of the patients assisted by the hospital nutrition and food services
- Formulated diets and menus for hospitalized patients with a focus on the following areas: AIDS, Diabetes, Cardiovascular diseases and Cancer
- Supervised meal preparation and distribution

Centre for Interdisciplinary Studies on the Elderly (Rio de Janeiro, Brazil, 1995).

- Taught courses regarding nutrition and the most common diseases developed during the aging process

- Taught courses regarding nutrition and the most common diseases developed during the aging process
- Collected and analyzed research data about the nutritional intake and socioeconomic aspects of the seniors enrolled in the program
- Organized collective kitchens

Volunteer and Community Activities

Volunteer work for the Calgary Regional Health Authority including:

- Bereavement Support Program (Palliative Care)
- Best Beginning Program
- Grocery Shopping for Seniors Initiative

Additional Skills

Languages: Portuguese (fluent) and Spanish (basic knowledge)

References

Will be provided upon request